FOR RICHER FIELDS

Croplife®

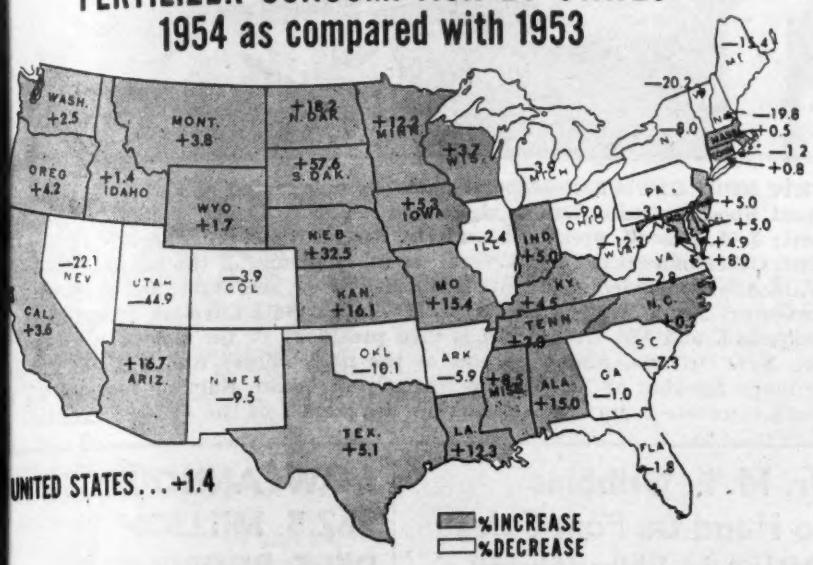
PUBLISHED EVERY MONDAY

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

Vol. 2 | Subscription Rates: $5 for 1 year, $9 for 2 years | JUNE 27, 1955 | Acceptance under Section 34.64, P. L. and R. authorized. | No. 26

FERTILIZER CONSUMPTION BY STATES 1954 as compared with 1953



UNITED STATES...+1.4

PREPARED BY NATIONAL PLANT FOOD INSTITUTE

Consumption of Fertilizer in 1954 Totals 20,508,000 Tons, for Increase of 1.4% And New Record, NPFI Report Shows

— See Tables on Page 20 —

WASHINGTON—Fertilizer consumption in the U.S. during 1954 edged upwards to 20,508,000 tons, for another new record, according to the National Plant Food Institute.

This is an increase of 277,000 tons, or 1.4% more than the 1953 consumption of 20,231,000 tons.

The figures are from a NPFI study, based on preliminary but authoritative estimates, and therefore are subject later to minor adjustments, according to the Institute. The statistics were included in an article in the summer issue of Plant Food Review, the new publication of the National Plant Food Institute. The following is from the article.

Calendar 1954 was the 16th consecutive year that fertilizer consumption pushed to a new high. This unbroken record of annual increases began in 1938 when fertilizer use was 8,548,000 tons. During this 16-year period, fertilizer consumption has almost tripled.

Plant food content of fertilizer also continues upward. There is every indication that the average N-P_2O_5-K_2O content of all fertilizers, mixed goods plus straight materials for direct application, has climbed to at least 26.6%.

This means that about 5,435,000 tons of plant food nutrients were applied to the nation's soils during the past calendar year. This is 377,000 tons, or 7.3% more than the 5,058,000 tons of plant food in all commercial fertilizer used in 1953.

The Corn Belt states are using an increasingly greater proportion of total U.S. fertilizer consumption in comparison with other regions.

(Continued on page 20)

INSECT, PLANT DISEASE NOTES

See Page 4

★

1954-55 Fertilizer Sales May Be Down 4%, NPFI Says

WASHINGTON—Reports gathered by the National Plant Food Institute from manufacturers all over the U.S. indicate that fertilizer sales on a tonnage basis may be down as much as 4% for the fiscal year ending June 30, 1955.

However, the reports indicate that the total plant food content of fertilizers may equal last year's record.

The institute says in its Weekly News Report that sales in the North-

(Continued on page 17)

Rules Outlined for Product Extensions Under Pesticide Law

— See Policy Statement, Page 8 —

WASHINGTON—The Department of Health, Education and Welfare has now established conditions under which the secretary will extend the effective date of requirements of the Pesticide Chemicals Amendment of the Federal Food, Drug, and Cosmetic Act, the Food and Drug Administration said recently.

The law is scheduled to become fully effective on July 22, 1955, but the secretary may extend this date on a product-by-product basis for a time not to exceed 12 months if she finds that conditions exist which require the additional period. Such conditions were set forth in a statement of policy published in the Federal Register for June 10, 1955.

The criteria for the individual postponements were recommended by the Food and Drug Administration. In this connection it is pointed out that July 22 falls in the middle of a growing season.

Many states have recommended the use of pesticidal sprays or dusts during the 1955 growing season for which formal tolerances have not yet been established, and it is not possible at this time to determine whether tolerances will be established for them before July 22. If tolerances have not been established by then and the law is not extended, crops bearing residues of these sprays or dusts may not legally be shipped in interstate commerce.

In order to avoid confusion and unnecessary loss of crops, the department will give favorable consideration to extensions of the effective date of the law until October 31, 1955, which is regarded as the end of the growing season, where such extensions will not jeopardize the public health.

Firms interested in requesting an extension should address the request

(Continued on page 8)

Inside You'll Find

Insect Notes 4
What's New 10
Field Notes 12
Oscar and Pat 12
Farm Service Data 13
Bug of the Week 14
Over the Counter 16
World Report 19
Editorials 22
Index of Advertisers 23
Meeting Memos 23

Pakistan Gets FOA Authorizations for Nitrogen, Pesticides

WASHINGTON — Foreign Operations Administration last week authorized a $2 million nitrogen procurement for Pakistan. It also authorized pesticide procurement for the same destination of slightly less than $9,000.

The nitrogenous fertilizer deal for Pakistan will be conducted by the Foreign Government Ministry of Industries, Department of Supply and Development, FOA says.

Authorization applies to a worldwide procurement base, and procurement must be completed by Aug. 31, 1955, and delivery not later than Sept. 30, 1955.

The pesticide authorization procurement is slated on this schedule: purchase by the above named national agency between June 17, 1955, and Aug. 31 for delivery not later than Dec. 31, 1955.

2 Canadian Firms Plan Anhydrous Ammonia Plants

MONTREAL—Detailed plans for a new plant at Millhaven, Ont., for the manufacture of anhydrous ammonia have been announced by Canadian Industries (1954) Ltd. Construction of the plant, estimated to cost $9 million, will begin immediately with completion scheduled for late in the summer of next year.

Another Canadian development in the anhydrous ammonia field is the proposed construction of facilities at Hamilton, Ont. by Dominion Foundries & Steel, Ltd. (Dofasco).

The capacity of the CIL plant at Millhaven will be 200 tons ammonia a day which, the firm states, will make it the largest ammonia plant in eastern Canada. The plant will require a staff of 100 operatives and will cover a 20 acre site.

Coincident with the building of the ammonia plant at Millhaven will

(Continued on page 21)

No Big Changes Seen in 1956 Federal Agricultural Conservation Program

WASHINGTON—U.S. Department of Agriculture has issued its national bulletin to control the disbursement of potentially $250 million this coming year for agricultural conservation payments. This fund is larger than the USDA had requested.

First it may be said that there is no substantial change in the overall general terms of the bulletin.

Spot items affecting the pesticide industry may be important, however. For example, under the terms of the 1956 bulletin there is no allowance of federal funds for weed control.

Another important item is the control that prohibits use of ACP funds for development of new crop land.

Entomologists Plan Expanded Yellow Clover Aphid Research

WASHINGTON — In cooperation with the state agricultural experiment stations of Arizona, California and Kansas, U.S. Department of Agriculture entomologists are planning an expanded research program during fiscal year 1956 to develop better control methods for combatting the serious outbreak of the yellow clover aphid in southwestern alfalfa fields, USDA has announced.

This pest seriously damaged alfalfa for the first time last year in Arizona, California, Nevada and New Mexico. Though found extensively for many years on clover in the U.S., the aphid did little economic damage prior to 1954. In that year it caused an estimated $4 million loss in alfalfa production in New Mexico alone. Losses to growers in Arizona were estimated at half a million dollars and in California at more than $300,000. This year the pest has also invaded Kansas, Oklahoma, Texas and Utah.

Following last year's outbreak, entomologists of USDA's Agricultural Research Service started work to improve control methods and to obtain additional information on the aphid beyond that already available from earlier research. These investigations were initiated in cooperation with state experiment stations and supplemented their programs. They included: studies of insect enemies of the aphid; preliminary work to determine whether the outbreak was due to a new strain of aphids, and to learn more about the habits of this insect; and evaluation of alfalfa varieties to find any that might have resistance to the yellow clover aphid.

The expanded research program for fiscal 1956 in cooperation with the Arizona, California, and Kansas Agricultural Experiment Stations is planned to include the following lines of work:

1. Resistant varieties. So far, two alfalfa varieties — Lahontan and an experimental cross appear promising as sources for breeding resistant plants.

2. Biological control, including parasites, predators and possibly insect diseases for use against the aphid. Entomological explorers of the California experiment station and USDA are now conducting a search in the Near East and in Europe for natural enemies of the aphid that can be brought to this country to aid in control. Similar exploration is being planned for India.

3. Expanded studies of insecticides, particularly those of the systemic type, for use against the aphid. The effect of insecticides on the aphid's insect enemies is also to be investigated.

4. Determining whether the yellow clover aphid currently damaging alfalfa differs from the species long known on red and other clovers in many sections of the U.S. and elsewhere throughout the world. Kansas appears to be exceptionally well suited for these studies, since the aphid has been observed on clovers in that state for many years, and it has only recently become a serious problem in Kansas alfalfa.

At the same time, a number of state experiment stations are concentrating on research to develop better insecticidal control methods for this alfalfa pest. With experience gained during the past year, fairly effective treatments have been developed for most areas. The insecticides generally used are parathion and malathion.

WEEVL DOOM
I'm of Age NOW!
WEEVL DOOM Liquid
GRAIN PROTECTANT
No Longer is New and Untried
For over 5 years WeevlDoom has been the answer to the grain infestation problem. A water-soluble spray, WeevlDoom is sold in a highly concentrated liquid form. No excessive freight costs for non-essential, bulky chemicals!
Easy to prepare! Dilute 1 part WeevlDoom to 15 parts water.
Easy to use! On the farm—apply to grain stream out of combine hopper at rate of 1 oz. to 1½ bu. In the elevator—5 gal. to 1,000 bu. in the boot or auger.
One application will protect for one full season at an average cost of 1.85c bu. at the farm level—1.2c bu. at the elevator level.
Use WeevlDoom in your elevator and sell it to your farmer customers. Don't risk discounts of up to $1 bu. on government loans. Farm or elevator spray equipment available.
Easy to Apply! Safe! Economical! Positive Results!
WeevlDoom may be purchased from the following distributors:
Industrial Fumigant Co., 925 State Line, Kansas City, Mo.
Salco Supply Co., Eaton, Colo. Harold D. Hansen, Foley, Ala.
Rocca-Curvi, Inc., 25 California St., San Francisco, Calif.
MID-WESTERN SPRAY-CHEMICAL CO. INC.
Hedrick 2338 P.O. Box 951 Mission, Kansas

NEW NPFI OFFICERS—Three of the newly-elected officers of the National Plant Food Institute, left to right, are: Paul T. Truitt, executive vice president; J. A. Howell, president, and Dr. Russell Coleman, executive vice president. Other officers are: E. A. Geoghegan, chairman of the board of directors; W. R. Allstetter, vice president; Louis H. Wilson, secretary, and W. S. Ritnour, treasurer. Mr. Howell is president of the Virginia-Carolina Chemical Corp., Richmond, and Mr. Geoghegan is vice president of the Southern Cotton Oil Co., New Orleans. Announcement of the new officers was made at the preliminary meeting of NPFI, held recently at White Sulphur Springs, W. Va. For a complete report of the meeting, see page 1 of the June 20 Croplife.

Dr. M. F. Gribbins To Head Du Pont Sales Office in Philadelphia

WILMINGTON — The nitrogen products sales section of Du Pont's Polychemicals Department will establish a district sales office in Philadelphia July 1, to cover the Atlantic seaboard.

Dr. M. F. Gribbins, district manager in Chicago for the last two years, has been appointed manager of the new Philadelphia office. His place in Chicago will be taken by H. Gordon Bethards, formerly a salesman for another Polychemicals sales section.

Field representatives to be connected with the new Philadelphia office are John Spicer, Jr., Goldsboro, N.C.; R. E. Burke, Winter Park, Fla.; Sidney Taylor, transferred from Minneapolis, who will work out of Philadelphia, and George F. Stewart, who will cover the New York and New England area. He will probably be located near Albany, N.Y.

Mr. Stewart is replacing N. A. Hite who is moving to the Midwest and will cover Ohio, Kentucky and Tennessee, reporting to the Chicago office.

The Chicago district sales force has been increased to five by the assignment of Jesse F. Taggart to cover Illinois and Indiana. The San Francisco district sales office, under M. N. Crady, covers the area west of the Rocky Mountains.

The nitrogen products sales section sells "Uramite" fertilizer compound, "NuGreen" fertilizer compound, "Two-Sixty-Two" feed compound, and "Uramon" ammonia liquors.

Dr. Gribbins, a graduate of the University of Miami, received his doctor of philosophy degree from Pennsylvania State University in 1942. Later that year he joined the Du Pont Co. as a chemist.

Mr. Bethards started work at Du Pont's experimental station as a laboratory assistant in 1939. After serving in the Army, he completed his studies for a bachelor of science degree at the University of Delaware. In 1948, he became a salesman for the Polychemicals Department specializing in industrial products.

CORN BORER DEVELOPMENT

FARGO—Development of the corn borer in North Dakota this spring appeared earlier than in previous years, report entomologists of North Dakota Agricultural College.

DOW ANNOUNCES $62.5 MILLION DEBT RETIREMENT

MIDLAND, MICH. — The Dow Chemical Co. has retired $62.5 million of long term loans from two insurance companies. Announcement of the repayment was made by Carl A. Gerstacker, Dow's treasurer, who said it comprised half of $125 million borrowed in 1947, 1951 and 1952 to help finance the company's postwar expansion program.

The retirement included $45 million on $90 million of 3.25% notes due in 1977 and $17.5 million on $35 million of 2.7% notes due in 1972. Dow had previously retired $1.5 million of the latter obligation through installment payments and installments will be required on both obligations until final due dates.

Mr. Gerstacker said the early retirements were made possible by the company's large internal cash generation, much of which is attributed to its current high rate of depreciation and amortization. Dow's depreciation and amortization for fiscal 1954 was almost $65 million and is expected to approach $75 million for the 1955 fiscal year just ended May 31. Meanwhile Dow's construction program has averaged about $50 million a year for the past two years.

The company retired all of its cumulative preferred stock last October at a cost of $32.5 million. In addition to the remaining $61 million of insurance company notes, Dow's other long term indebtedness consists of $100 million of 3% convertible debentures due in 1982 and $20 million of 2.35% debentures due in 1961, Mr. Gerstacker said.

West End Chemical Acquires New Lime Rock Deposit

OAKLAND, CAL.—West End Chemical Co. has announced the discovery and acquisition of a new limerock deposit in the Argus Range, Inyo County, California, just north of its present plant in Westend, Calif.

Company officials are anticipating transferral of their present quarry operations to the new site in the immediate future. Under consideration is the installation of a rotary lime kiln using natural gas as fuel. Top capacity of this new kiln will be 170 tons of lime per day.

West End also announced the completion of its new sodium sulfate unit within the next thirty days.

ampaign Against exican Fruit y Progresses

SACRAMENTO—H. M. Armitage, ef of the Bureau of Entomology, lifornia Department of Agricul-e, reports that the 23rd applica-n of bait spray to host trees along international border has been mpleted in the campaign against Mexican fruit fly.

The spray applications have blan-ed host trees on the California e of the international line within e miles of the border, thus estab-ning a protective barrier against possibility of reinfestation from ow the line. The five mile wide t extends 150 miles from the Pa-ic Ocean to the Arizona border on East. Spray applications are made ery three weeks.

The campaign started in April, 54. Since that date 282,717 host rees — citrus and deciduous fruit rees and subtropical fruits, such avocado, loquat, and catrimoya have been sprayed with 61,825 allons of poison bait material. Ma-erials are furnished by the U.S. epartment of Agriculture.

The number of private properties volved in the spray operation nges from 1,300 during the winter nths when deciduous trees are de-iated, to about 4,000 in the sum-r months when all host trees are full leaf. Operations represent a jor public relations job in main-ning the cooperation of property ners along the boundary who are onvenienced by the operations. peration to date has been excel-t, however.

Although no Mexican fruit flies e been trapped in California since single specimen was found near n Ysidro, San Diego County, in gust, 1954, the state plans to con-ue protective operations through s summer and next.

Mr. Armitage said that if, at the mpletion of 1956 operations, fed-l surveys fail to show any further s below the border as the result eradication measures being pur-d there by the U.S. Department Agriculture in cooperation with exican agricultural authorities, n it may be proper to suspend aying operations.

The California department, he said, l continue to use malathion and rtially hydrolized yeast as its bait ray. When the campaign was rted, a combination of tartar etic and sugar was used as a ay. The malathion-hydrolized yeast nbination is considered superior, cials say.

l E. Weyl Joins sect Survey Section

WASHINGTON—Val E. Weyl, for-r National Agricultural Chemicals n. editor, has joined the staff of Economic Insect Survey Section, nt Pest Control Branch, U.S. De-rtment of Agriculture, according Kelvin Dorward, head of the sec-n.

Mr. Weyl is working on the Co-rative Economic Insect Report doing other special writing. He with NAC about four years.

ch Leaf Miner festation Severe

NEW YORK—Destruction of birch ves by the birch leaf miner has n reported as the worst in five rs in New York, New Jersey and nnecticut. The heavy infestation blamed by a New York Botani-Garden spokesman on the failure the public to heed earlier sugges-ns for a first spraying in early y. A new assault by the insects sprouting leaves is expected to n in late June or early July.

Allen V. Riley, Atlas Representative In Texas, Dies

WILMINGTON — Allen V. Riley, technical sales representative for Atlas Powder Co. in the Houston, Texas, area, died June 10 after an extended illness.

Succeeding him as technical sales representative in Houston is Latane De S. Lamb. Mr. Lamb, a native of Greensboro, N.J., attended schools in Wilmington, Del., and served in the Navy during World War II. Following his release from service, he attended North Carolina State College, where he majored in textile engineering.

After several years in pharmaceutical sales, he joined Atlas in 1954 at the company's Central Research Laboratory near Wilmington, transferring to sales work later that year. He and his wife will live in Bellaire, Texas.

Mr. Riley, a native of San Saba, Texas, received his degree in chemical engineering from the University of Minnesota, and worked for several construction firms before joining Atlas as a chemist in 1948. He had been in sales since 1951. During World War II he served two years in the Army. Surviving is his widow, Louise B. Riley.

W. C. Walker Named To Witco Position

NEW YORK — Announcement is made of the appointment of W. C. Walker as assistant to the vice president in charge of advertising and public relations of Witco Chemical Co., 122 E. 42nd St., New York. Mr. Walker was formerly associated with Chas. Pfizer & Co., Inc., where he was in the public relations department.

Lion Oil Co. Barton Plant Workers Reject Union

NEW ORLEANS — Operating and maintenance employees at the Barton Plant of Lion Oil Co., Luling, La., recently rejected the Oil, Chemical and Atomic Workers International Union, CIO, as the bargaining agent for the group, company officials announced.

According to the certificate of the election, signed by John T. Lacey, NLRB representative, 50 cast ballots in favor of, and 210 voted against, the union. There were 277 employees eligible to vote in the election which was conducted by the National Labor Relations Board.

FARM VALUE RISES

NEWARK, DEL.—Farm real estate value in Delaware rose 5% during the past year despite a drop of 5% in farm prices.

GRADUATION—GIANTS OF THE FUTURE

Congratulations to the June graduates!

These men and women will be taking their places in the business and community life of America.

Their enthusiasm, vision, and faith in the future help speed the growth and service of both business and agriculture.

Businessmen who make commencement addresses are helping create "giants of the future."

P.C.A. The SALT of the EARTH RED MURIATE

POTASH COMPANY OF AMERICA
CARLSBAD, NEW MEXICO.

General Sales Office . . . 1625 Eye Street, N.W., Washington, D.C.
Midwestern Sales Office . . . First National Bank Bldg., Peoria, Ill.
Southern Sales Office . . . Candler Building, Atlanta, Ga.

INSECT, PLANT DISEASE NOTES

Alfalfa Weevil Threatens Washington Border Area

PULLMAN, WASH. — Dr. H. S. Telford, chairman of the Washington State college department of entomology, warned Washington farmers this week to be on the lookout for alfalfa weevil.

Dr. Telford said it is possible the pest may already be infiltrating border area crops.

Federal and state entomologists have been battling this pest elsewhere for 50 years, Dr. Telford said. It is a native of southern Europe and was discovered first in the U.S. near Salt Lake City in 1904.

It feeds on legumes in particular and its economic damage is confined to alfalfa. It lays eggs on green alfalfa stems in early spring.

The larvae feed on the foliage then spin a cocoon and pupate. The adult overwinters in the field. Injury is worse in late May and early June. The larva is ⅜ in. long, has a brown head and green body with a white stripe along the middle of the back paralleled by another fainter stripe along each side.

"A parasitic wasp preys on the weevil but it isn't dependable control," Dr. Telford said.

"It takes chemicals to do the job—chlordane, heptachlor, dieldrin, aldrin, lindane, methoxychlor, parathion or DDT. They're all aimed at killing the overwintering adult before it can deposit eggs."

Corn Borer, Earworm Attack Illinois Fields

URBANA, ILL. — Because cool weather in early June delayed development, the corn borer situation is more favorable for the borer in Illinois than was anticipated 10 days ago.

In the area south of a line from Champaign to Quincy, moth emergence has been complete for over a week and egg-laying is now finished. Only in very rare instances is treatment warranted for field corn in this area.

In the area between a line from Champaign to Quincy and Highway 6, moth emergence is from 90 to 100% complete, and egg-laying is now complete. Egg counts vary considerably in different localities, but during the past week field corn over 30 in. high had as many as 200 egg masses per 100 stalks. This week field corn over 40 in. high with leaves extended may warrant treatment, particularly if 75% of the plants show borer leaf feeding in the whorl.

Between 1 and 5% of the total acreage of corn may warrant treatment. Treatment dates will range from June 22 to June 28 in this area.

North of Highway 6, moth emergence ranges from 85% in the west to 60% near Lake Michigan. It will probably not be necessary to treat the most advanced fields until the week of June 27.

In the northern area, early-planted fields of canning sweet corn may need treatment next week.

Grasshopper infestations are still spotted throughout much of the state, but it is impossible to designate specific areas as trouble spots. In many cases the young grasshoppers are concentrated in grass pastures, fence rows, ditch banks, and roadsides. Many of them have, however, migrated into legume fields and also into grain fields, where they are beginning to feed on the new seedings of legumes. Where young grasshoppers are extremely abundant treatment should be made.

Chinch bugs in some cases are abundant on small corn where wheat, rye, or some other grass crop was plowed under. There are reports of spotted severe infestations in southwestern Illinois. Dieldrin, ½ pound per acre, will give effective control and will continue to kill bugs that come into contact with the residue for seven to 10 days.

Occasional fields are still infested with armyworms and in some few instances the worms have migrated into corn fields.—H. B. Petty.

Corn Borer Spraying Pays Off in Iowa

AMES, IOWA — It appears that spraying for corn borer will be profitable until June 26 in south and central Iowa and in northern Iowa perhaps until June 30. Treatment is advised as soon as 75% of the plants show leaf feeding or shot holing on upper leaves.

There will likely be some new leaf feeding by the borer on plants sprayed earlier. In addition, some corn that was too short to be attractive earlier this month has grown and is now receiving egg masses. Some of it will need treatment.

Egg counts made June 15-17 on tallest corn: Southern Iowa—200-600 masses per 100 plants; central Iowa—20-300 masses per 100 plants; northern Iowa—12 to 100 masses per 100 plants. These are new egg masses which will hatch during the coming week.

Corn root aphids are damaging and destroying corn in Plymouth, Woodbury, Monona, Harrison, W. Pottawattamie, Mills, Madison, Warren, and Appanoose counties. Infestations are usually in dry soil. Plants are stunted, yellow and in some cases they die. If replanting is necessary, a soil insecticide to kill both ants and aphids is advised. If the field is replanted to beans, treatment is not needed.

Common stalk borer is attacking oats and brome grass, wheat and corn. In small grain and grass, heads are white. In corn, the stalks near fences and ditches are bored out. Borers are ¾ to 1 in. long now.

Wheat joint worms and wheat stem maggot are present in small numbers in ripening wheat in Monona County.

Wireworms are still active in many areas.

Several herds of cattle have been recently shipped in from the western mountain areas, heavily infested with cattle lice.—Harold Gunderson.

Hoppers Remain No. 1 Problem in Missouri

COLUMBIA, MO. — Grasshoppers continue to be the main insect problem in Missouri, according to extension and survey entomologists.

Damage is increasing every day and in many areas will reach serious proportions within another couple of weeks. There has been considerable spraying done so far, but a great deal more needs to be done. The hoppers are rapidly spreading through crops, and we have about reached the point in most parts of the state where crops, as well as pasture lands and field margins, will have to be sprayed.

In the southern part of the state, the summer dosages of 4 oz. of aldrin, 4 oz. of heptachlor, 1½ oz. of dieldrin, 2 lb. of toxaphene, or 1 lb. of chlordane per acre are advised. Over the rest of the state, the dosages may be increased in about another week or 10 days.

In those areas where spraying for European corn borer may be necessary this year, the spraying should be done now. As soon as 75% show leaf feeding damage, the field should be treated.

The corn borer infestation is quite spotty in Missouri this year. Each field is an individual problem, and no blanket recommendations for or against spraying can be made. Throughout the northern part of Missouri, it is advised that each farmer check his early corn for borer damage.—Stirling Kyd and George W. Thomas.

St. Augustine Grass In Florida Attacked

GAINESVILLE, FLA. — The lesser cornstalk borer in the larval stage destroyed one soybean plant out of 20 inspected in a one-acre planting at the Suwannee Valley experiment station at Live Oak.

Leafhopper in the nymphal and adult stages, and spittlebug in the adult stage were collected in sweepings of St. Augustine grass at Lakeland. The fall armyworm, averaging one larva per square foot, caused light to moderate damage to St. Augustine grass at Fort Lauderdale. Here also the chinch bug in the egg, nymphal and adult stages, averaging up to 80 per square foot, infested St. Augustine grass. Controls are definitely recommended on lawns.

The tobacco hornworm averaging one larva per 50 plants and tobacco budworm averaging one larva per 25 plants infested a 3-acre block of tobacco plants about ready for harvesting in Union County. Hailstorm damaged this crop about three weeks ago.

The hornworm averaging one larva per 10 linear feet of hedge caused light infestations on ligustrum at Gainesville. This was the second year in a row hornworms have attacked this ligustrum.

Mosquitoes in the adult stage averaging one bite per minute under field conditions were becoming a pest as is usual about this time of year in Dade County.—H. A. Denmark.

Thrips Cause Damage To Cotton in Arizona

PHOENIX, ARIZ.—During the past week, unusually high daytime and night time temperatures were recorded in Arizona and in some places, cotton suffered. Thrips are still causing serious injury, it is reported.

In Maricopa County, thrips are still numerous in late-planted fields; and controls are necessary. Eggs of the leaf-roller are showing up in many fields in Maricopa County.

In Graham County, lygus have been observed in many fields; sweepings showed 85 to 100 lygus per 100 sweepings, with a few stinkbugs. Bollworm larvae were numerous in alfalfa fields; and in many instances, 20 were picked up to every 100 sweepings. A small dipterous leaf miner was rather numerous on the cotton in Graham and Cochise counties.

In the Sahuarita area of Pima County, bollworms are causing minor damage to small squares.

Thrips continue to be a problem on late-planted cotton in Pinal County and some controls are necessary.

The verticillium wilt is causing leaf-shedding in Pinal County.—J. N. Roney and Ivan J. Shields.

Grasshoppers, Chinch Bugs Plague Kansas Fields

MANHATTAN, KANSAS — Destructive populations of grasshoppers (Melanoplus spp.) continue to develop (where not controlled) in many areas of Kansas. Although heavier populations occur chiefly in the eastern third of the state, threatening populations also occur in many localized areas in central and western counties. Counts of grasshoppers in eastern Kansas range from 30 to 120 per square yard in the infested areas. Surveys this past week in central and western Kansas showed populations ranging from 15 to 90 hoppers per square yard. Some alfalfa fields in Sedgwick County have infestations that have already eaten the leaves from plants in the field margin and are moving into the field.

Chinch bug populations have built up to outbreak proportions in some central and southeast Kansas areas. Many fields of seedling sorghum and milo that are adjacent to barley and wheat fields are suffering great reduction of stand. Heavy infestations were observed in that area of the state extending from Saline and Dickinson counties in central Kansas, east and south through the Flint Hill region.

Destructive infestations occur in Saline, Dickinson, Morris, Chase, Marion, Osage and southern Shawnee counties. Barrier control practices will be necessary to save some fields in the infested areas although some fields will have to be replanted.

European corn borer activity has begun in both fields of field corn and sweet corn in the Kansas River Valley and in northeast Kansas. Although few egg masses were found evidence of larval feeding activity was present in many of the fields that were examined.—David L. Matthews.

Delaware Reports Alfalfa Weevil, Beetle Damage

NEWARK, DEL. — The alfalfa weevil has seriously retarded second growth alfalfa in Delaware.

The green cloverworm is prevalent generally. Armyworms (all sizes) were observed throughout the state in forage legumes, especially those with grass combinations. Migrations from recently-mowed fields into corn and other susceptible crops are occurring near Slaughter Beach, Felton and Hazlettville. The pea aphid remains heavy in the Middletown area.

The Mexican bean beetle and spotted cucumber beetle adults are injuring limas at Ellendale and Georgetown. One percent rotenone dust is suggested.

Adults of imported cabbageworm are everywhere abundant; eggs numerous, and small larvae (second generation) were found at some points.

The armyworm is attacking barley and rye in southern New Castle County, in the Leipsic-Dover area in Kent, and on Primehook Neck, Sussex.

Corn damage by European corn borer is conspicuous from Smyrna southward.

Wherever the second-cover spray on peaches was completed in advance of June 6, a 14-day interval should be followed before commencing the third-cover.

The first of the four monthly treatments for control of peachtree borers is suggested now. DDT (8 50%, or equivalent, in 100 gal. water should be used. Optional control with paradichlorobenzene is not until late September.

Preparations should be made the 10-day spray on grapes. Materials and rates are the same as in pre- and post-blossom applications.

The potato aphid is heavy in vicinities of Smyrna and Cheswold potato leafhopper, numerous generally; and Colorado potato beetle injurious everywhere in small plantings.—L. A. Stearns and J. Heuberger.

Hoppers, Corn Borers Develop in Minnesota

ST. PAUL, MINN.—Minnesota state entomologists report finding armyworm larvae in winter wheat, pastures, brome grass and reed canary grass in eight counties.

Two striped hoppers (Melanop

vittatus) are becoming more prelent and entomologists suggest eatment if 6-8 small hoppers per uare yard are found.

Corn borer development was rerded earlier in June but it is two eeks ahead of 1954 development. warming trend will rapidly step moth emergence and egg-laying Heavy infestations of the Red egged Grasshopper (Melanoplus mur-rubrum) were appearing in eas of light, sandy soils in Anoka d Chisago Counties during the eek ending June 18. This species likely to be abundant in most unties as the season progresses.— W. Butcher.

Weevil Infestations Widespread in Georgia

ATHENS, GA.—The Cotton Insect urvey, of the Economic Insect Surey Section of the U.S. Department Agriculture, indicates a total of 71 elds in 15 south Georgia counties urveyed. Weevil infestations were und in 68 fields.

Twenty-two untreated fields were xamined and all were weevil insted. Counts ranged from 4 to 16% ith an average of 8.3% punctured quares.

Forty-nine treated fields were xamined and 46 were infested with he boll weevil. Counts ranged from to 10% punctured squares with an verage of 3.4%.

Although the above survey shows relatively light weevil damage, the infestation is rather general in south Georgia. Enough weevils are present to build up to serious proportions before the end of the season if conditions are favorable.

Farmers are urged to make regular square infestation counts in heir fields to determine if and when nsecticides are needed. If 10% or ore weevil punctured squares are und, a series of four applications f insecticide should be applied at -day intervals.—C. R. Jordan.

Massachusetts Tobacco Beds Hit by Blue Mold

AMHERST, MASS.—The first blue old in tobacco beds has been found y Massachusetts entomologists. One ed was a complete loss and had to e destroyed, another was heavily nfected and emergency gas treatent (paradichlorobenzene) was tarted. Several other beds were und with only one or two infected lants, but the majority of beds, owever, were clean. In all cases of erious infection growers had negected treatments or had been careess in thoroughness and regularity f application of ferbam or zineb ngicides.

With a little more than half the rop planted in the field, warnings ere sent to growers by radio, newsaper, and flash card to step up reatments and to continue treatents until all planting is done nd unused plants in the beds are illed.—C. J. Gilgut.

Cotton Insect Infestation Up in South Carolina

CLEMSON, S. C.—Reports from ounty agents in 27 counties of outh Carolina show an increasing umber of insects in cotton fields of he state. The agents report a rather apid build-up of boll weevils in ractically all counties.

According to the reports thrips continue a menace in cotton fields in parts of the state especially in Piedmont counties. Bollworms were reported in cotton fields by 13 county agents, and entomologists at the Pee Dee Experiment Station, Florence, report bollworm eggs and larvae were found in terminal buds in several cotton fields in Florence County.

The reports from the county gents indicate that most cotton growers are apparently not taking steps to protect their cotton against early damage by these pests, and to prevent later build-ups especially of boll weevils and bollworms. Only about 69,000 acres in the 27 counties are reported as having received one or more applications of insecticides.

Codling Moth Activity At Peak in New Jersey

NEW BRUNSWICK, N. J.—Codling moth activity has reached a peak in southern New Jersey and orchards in the state receiving no applications for 10 days need a cover spray including insecticides. Peak entry in northern New Jersey will be in late June.

Bronzing of foliage by European red mite in some orchards in Burlington County has been observed. Growers should check orchards for this pest and for the green apple aphid.

No further scab development has been reported in any of the well sprayed orchards. After the next spray, which most growers are applying this week in southern Jersey, captan should not be necessary if scab is well under control.

A serious build-up of mildew has appeared.

Reports from Moorestown indicate first major flights of moths of new brood Oriental fruit moth occurred June 8.

More winter and spring infections of the canker disease are appearing in some orchards where it is felt that hurricane damage from last year may hve been a contributing factor.—Leland G. Merrill, Jr. and Spencer H. Davis, Jr.

Grasshoppers Numerous In Tennessee Fields

KNOXVILLE—Thrips continue to do some light damage to cotton all over the area. Spider mites are scattered, very light, but present in a number of fields. Predators of spider mites are numerous in all fields. Aphids (plant lice) are decreasing in most fields. Predators numerous. Fleahoppers are still light in all fields surveyed. Nymphs and adults present. Grasshoppers are heavier than usual around environs to fields.—R. P. Mullett.

Mites Cause Damage In Indiana Orchards

VINCENNES, IND. — Daily bait trap captures, emergence cage records, over-wintering tree bands and orchard checking for new entries all show that first brood codling moth activity has practically ceased and that codling moths are between broods.

Mite counts made in apple orchards June 16 and 17 showed that, in general, populations in sprayed orchards are low, but in orchards where no summer miticides have been applied populations are beginning to be heavy enough so

(Continued on page 17)

Keep It Clean!

PREVENT
WEEVIL DAMAGE
TO STORED WHEAT
with

WHEN YOU BUY *Niagara YOU BUY PROTECTION

Pyrenone*

*Reg. U. S. Pat. Off.

WHEAT PROTECTANT

Dealers . . . Distributors!

Here is a "tailor made" product for your wheat-growing customers. Clean wheat and the dollar advantages it has are becoming more important every day.

The government clean wheat program means business for you.

Be ready to supply Niagara Pyrenone Wheat Protectant to your customers. Niagara advertising in Midwest farm publications teamed with editorial coverage in the agricultural press is creating demand. Stocks are available in the Midwest.

Write, wire or phone Niagara Chemical Division at Middleport, New York or Wyoming, Illinois for particulars.

Niagara CHEMICAL DIVISION

FOOD MACHINERY AND CHEMICAL CORPORATION

Middleport, N.Y., Wyoming, Ill.

Missouri Cooperatives Report on Costs of Right-of-Way Spraying

COLUMBIA, MO.—Missouri Rural Electric Cooperatives report that the cost of foliage spraying per right-of-way unit varied from $5.75 to $45, according to the method used. In terms of cost an acre, the average was $29.

Cost of basal stem and stump treatments ranged from $10.50 to $48.95 and averaged $26.88 per right-of-way unit or $58.54 an acre.

These figures were taken from a survey made by J. D. Crumpacker and R. E. Larson, agricultural engineering research personnel at the University of Missouri. Mr. Larson is also agricultural engineer for the U.S. Department of Agriculture.

Results of spraying treatments were quite variable but the average estimated root kill—per cent of trees with no visible sign of life the year following treatment—was 61% for foliage treatments, 79% for basal stem, and 82% for stump treatments.

Cooperating with the university's agricultural engineering department in conducting the survey were managers of 17 electric cooperatives who filled out and returned questionnaires sent them.

Survey answers show that the 17 cooperatives sprayed approximately 15,000 miles of right-of-way to control brush growth during the past five years. About ⅔ of this total, or 9,500 miles, was foliage sprayed with a brush killer made up of 2,4-D and 2,4,5-T in water.

Most of the remaining 5,500 miles were basal stem or stump treated with the same herbicides. Some cooperatives used the 2,4,5-T only.

WIND EROSION

DENVER — A total of 6,193,482 acres in 204 eastern Colorado counties have been eroded by wind since last Nov. 1.

CSMA Proceedings Now Available

NEW YORK—Printed copies of the proceedings on the 41st annual meeting of the Chemical Specialties Manufacturers Assn., Inc., held in New York City last December, are now available.

Containing a complete transcript of all general, divisional and special committee meetings, the 210-page, spiral-bound record is priced at $7.50 per copy postpaid in the U.S. and Canada, and $8 per copy postpaid to other countries. Orders should be addressed to the secretary, Chemical Specialties Manufacturers Assn., 50 E. 41st St., New York 17, N.Y.

LESS LABOR

URBANA, ILL. — Labor requirements for raising corn in southern Illinois have changed from 92 minutes for each bushel raised in 1913-16 to only eight minutes in 1952-53.

Ivor R. Burden

Ivor R. Burden Named Vice President of Heckathorn, United

RICHMOND, CAL.—E. S. Heckthorn, president of Heckathorn & C United Chemical Co., and United Fe tilizer Co., 600 S. 4th St., Richmon Cal., has announced reorganization changes made by the board of d rectors to implement the firm's rece expansion program.

Ivor R. Burden was designated vi president and general manager of three companies, and sales manag of the United Chemical Co. Harry Field was appointed sales manager Heckathorn & Co., with Pet Cherian as sales manager of Unit Fertilizer Co., and purchasing age for all three companies. E. G. Tri pey was designated operations ma ager and assistant secretary of three companies.

Also involved in the reorganizati were George G. Robinett as ch accountant, Herbert Fawcett credit manager, M. D. Riddle as ma ager of the development departme and Melvin Bjorum as manager stock control.

Georgia Group Plans Series of Statewide Fertilizer Conferences

ATLANTA — The Georgia Pla Food Educational Society, Inc., conjunction with the Extension Se ice, College of Agriculture of University of Georgia, is planning series of state fertilizer conferen which will include field tours and d cussions of agricultural practice all designed to improve the econo status of Georgia farmers.

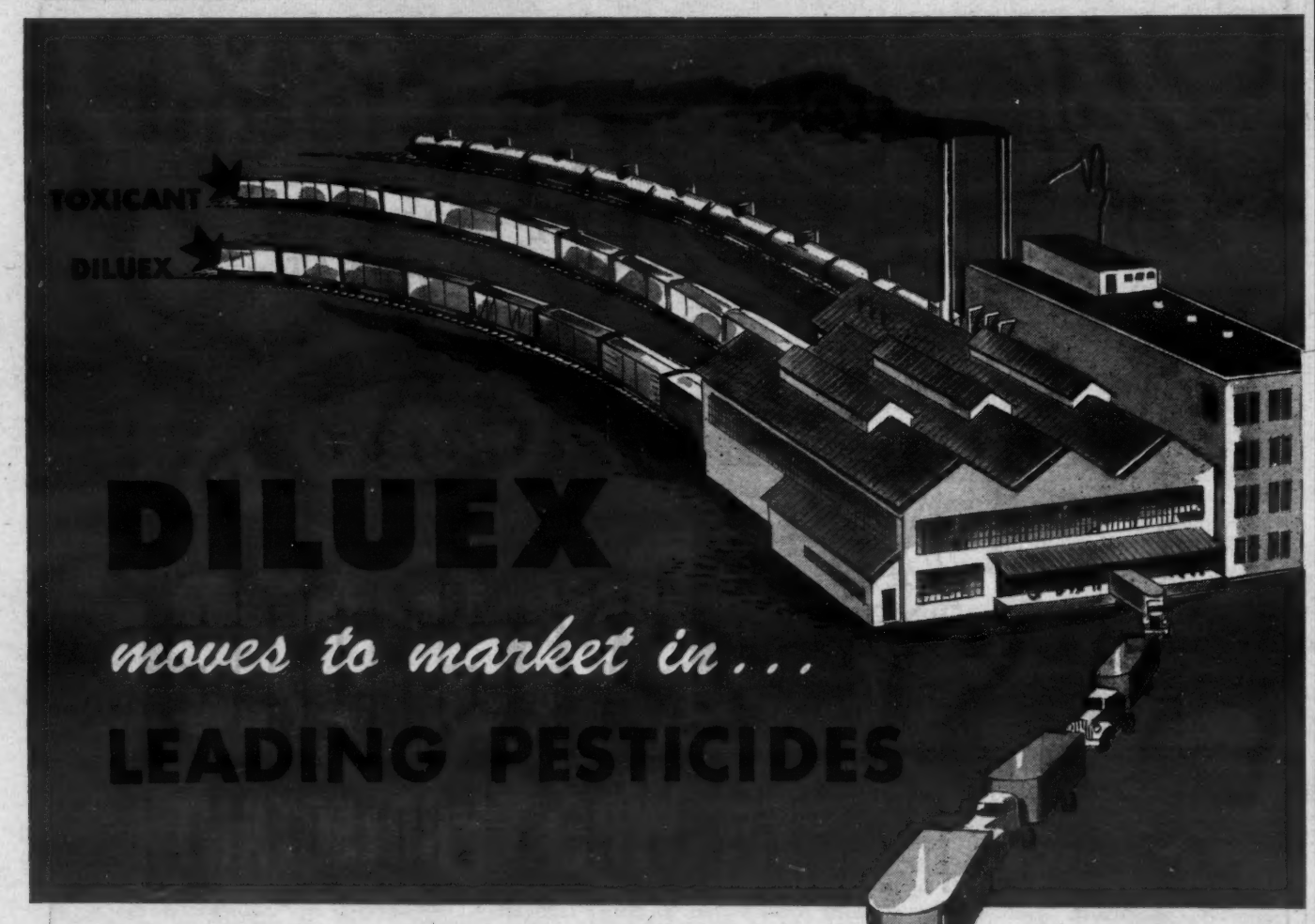
The conferences will assemble the following places:

July 6, Chipley, crossroad U.S. and State 18; July 7, Madiso Eatonton Highway, Rock Eag 4-H Center; July 13, Camilla, Hi School Auditorium, and July Statesboro, Recreation Center.

The program at each confere will include the following:

Assembly, registration and w come; "Installation and Utilizat of Irrigation Systems," W. E. H ton, University of Georgia extens agricultural engineer; "Fertili Recommendations for General Cr Under Irrigation," Ralph Johns University of Georgia extens agronomist; "Summary of Fa Practices, Costs and Returns on W ning Farms," by the farmer; "F tilizer Needs in Area for Econom Feed Production," by the cou agent; lunch and tour of the farm

Visits will be made to farms some of the winners in the Geo grazing system contest. In the mo ing, practices used by the winner be discussed, including costs and turns from fertilizer, a discussion irrigation practices and fertili needs for irrigated crops.



PESTICIDE ON ITS WAY

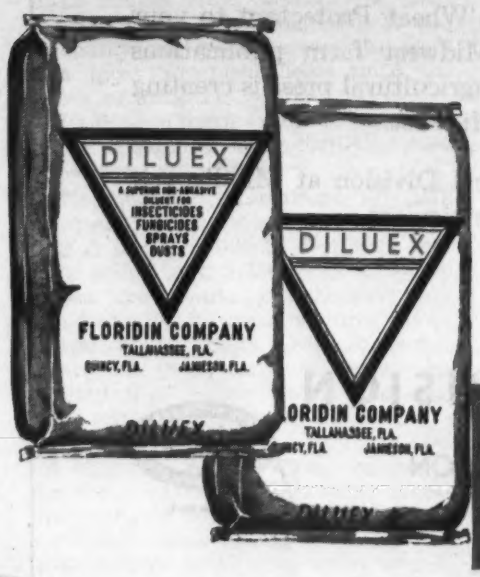
On the basis of technical study and practical experience, Floridin products, extracted and specially processed at Quincy and Jamieson, Florida, are coming into more and more general use in the agricultural chemical industry.

Are you impregnating toxaphene—chlordane—aldrin—parathion—any liquid toxicant?

Are you milling DDT, BHC, or other organics?

Formulating blended dusts?

For any of these processes, it will be worth your while to learn about DILUEX and DILUEX-A.



As grinding aids, adsorbent concentrate bases, and dust conditioners for the most exacting uses of the industry, Floridin products have won a leading place. The demand for DILUEX and DILUEX-A, increasing steadily for many years, has recently grown to multiplied tonnage. Production facilities have been enlarged accordingly, and shipments are being made without delay, by train and truck from two Floridin plants at Quincy and Jamieson, Florida. Correspondence is invited.

FLORIDIN COMPANY

Adsorbents . . . . Desiccants . . . . Diluents

BOX 998 DEPT. J TALLAHASSEE, FLA.

itrus Black Fly ...otted in Lower ...o Grande Valley

BROWNSVILLE, TEXAS — There ... indications that the dreaded citrus ...ck fly has entered the Lower Rio ...nde Valley citrus area, according ... N. O. Berry, U.S. Department of ...riculture expert.

At least one fly was spotted on a ...rus tree outside a Brownsville ...rist court. It was theorized that ... specimen came over from Mexico ... attaching itself to a tourist's auto...bile.

The fly is not much larger than a ...d-sized gnat, but it is one of the ...st troublesome and costly pests ...own to the citrus industry, Mr. ...rry said.

Although the black fly has never ...aded the Texas citrus area, two ...ht infestations were reported about ... year ago in northern Mexico, one ...ectly across the Rio Grande from ... Texas Valley. The Mexican gov...nment, with help from the U.S., ...s spent millions of pesos in trying ... control and eradicate the pest. ...ny years ago the fly invaded the ...rus-producing area around Key ...est, Fla., and it was eradicated ...ly after a prolonged and expensive ...adication program.

Citrus growers, taking no chances ... the fly gaining a foothold in Texas, ...ve begun spraying operations.

Mr. Berry said that the fly does ...t normally travel far under its own ...wer, but it sometimes flies into ...tomobiles and is carried great dis...nces. The fly lays an egg under the ...rus tree foliage. The eggs hatch ...o larvae which completely cover ... underside of the leaf, making it ...ack.

Mr. Berry was optimistic about ...lting the threatened invasion in ... Valley, since growers recognize ... danger and have started preven...tive spraying in time.

...iscovery Concerns ...alifornia Growers

SACRAMENTO—H. M. Armitage, ...ief of the Bureau of Entomology, ...lifornia Department of Agriculture, ...d California citrus growers are ...ch concerned by the reported dis...very of an infestation of citrus ...ck fly near Brownsville, Texas.

"While there is little danger of ...tural spread from any established ...festation in Mexico and Texas to ...lifornia, at the same time growers ... much concerned with such re...rts and are reassured by the prompt ...adicative action taken," Mr. Armi...ge said.

Present plant quarantines appear ... give proper protection against the ...ssibility of the fly being brought to ...lifornia on any of its host plants, ... added.

...eavy Infestation ...f Pink Bollworms ...en in South Texas

CORPUS CHRISTI, TEXAS — A ...avy infestation of pink bollworms ... South Texas can be expected this ...ar, according to D. M. McEachern, ...oject leader for pink bollworm con...ol in this area.

Bloom inspection is already under ...y in many counties, where a high ...ncentration of worms has been ...und. Mr. McEachern says the ...rry-over rate of worms from last ...tumn was about the same as a ...ar ago, but with less cotton planted, ... infestation might be heavier than ... 1954.

He also says that similarly high in...stations of other cotton insects can ... expected this year.

...ROACH CONTROL PROGRAM

BATON ROUGE — A statewide ...ch control program is being spon...ed this month by the Louisiana ...te University Agricultural Exten...n Service.

Agronomists Report $3.20 Return for $1 Spent on Fertilizer

EAST LANSING, MICH.—Returns up to $3.20 for each dollar spent on fertilizer have been reported by Michigan State College agronomists in corn fertilizing tests.

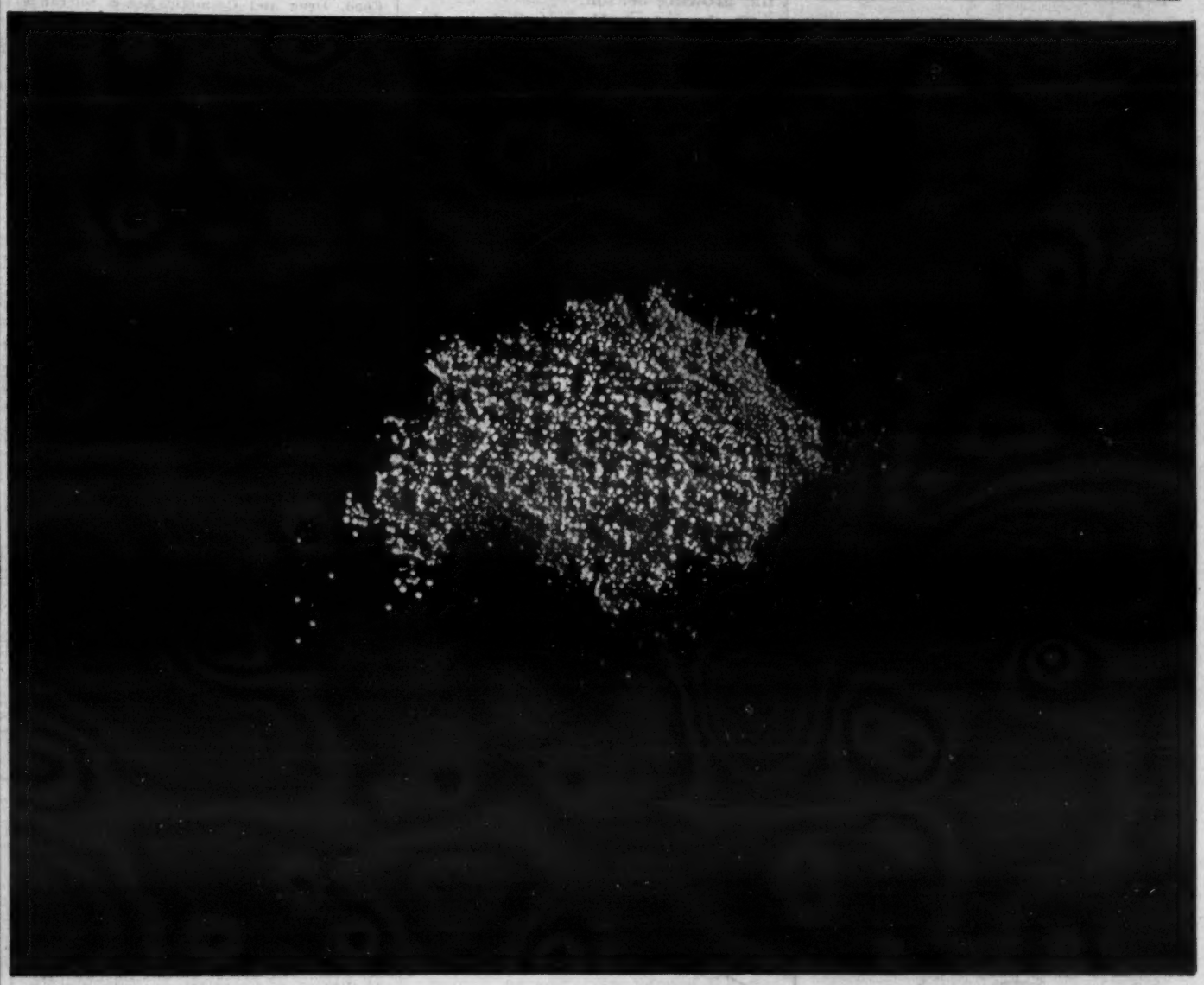
The Michigan soils specialists added varying amounts of fertilizer to corn and then checked the results. The crops were grown under recommended soil management practices.

The first dollar spent for 100 lb. of nitrogen-phosphate-potash fertilizer returned $3.20 in net profits, after the cost of the plant food was deducted. Yields increased eight bushels per acre.

The next dollar spent for fertilizer also returned $3.20 in profit, with yields increasing another eight bushels per acre.

The third dollar returned a $2.40 profit, with yields increasing another six bushels.

DOUGLAS SALES MEETING—The above photo was taken recently at a national sales meeting of the Douglas Chemical Co., Kansas City. One of the purposes of the session was to announce Tetrakote, the firm's new grain protectant, according to Joe L. Kirk, director of sales and advertising. In the photo, from left to right, are, seated, Ben Wilson, Ed Keefe, Ward Graham, technical director; Barney Mahoney, sales manager; W. C. McCaslin, executive vice president; Joe L. Kirk, director of sales and advertising; Don Farmer, advertising manager; Paul Smith, August Collis and Harold Chandler. Standing, Colonel Wheeless, M. H. Johnson, John Collins, Paul Crawley, Marvin Jones, E. D. Teel, Bob Luthy, Harry Bostron, Dick Smith and Fred Klemp, account executive for Carter Advertising Agency.

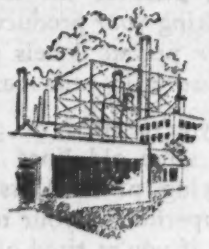


between you and this page

. . . is roughly one cubic foot of NITROGEN gas. Floating free in the air this nitrogen can't add to America's agricultural or industrial wealth. But Grace Chemical Company has opened a plant in Memphis, Tennessee, that "fixes" atmospheric nitrogen in the form of two very versatile compounds—ammonia and urea. (Shown in the photo are prills—tiny beads—of urea containing the equivalent to the amount of nitrogen gas between you and this page.)

Fixed in this way, nitrogen can enrich our crop farms, our livestock, and our homes—through its use in fertilizers, feed supplements, and the manufacture of products ranging from toothpaste to television cabinets.

Output of the $20,000,000 Memphis plant will be 72,000 tons of nitrogen a year. It will provide industry and agriculture these two forms of nitrogen from a *dependable* source—backed by a world of experience.



For AMMONIA and UREA look to —

A WORLD OF EXPERIENCE*

*Trademark

GRACE CHEMICAL COMPANY

W.R. GRACE & CO.

P. O. Box 4906, North Station, Memphis, Tenn.

Atlanta, Ga., 1401 Peachtree St. • Chicago, Ill., 75 East Wacker Drive • New York, N. Y., Hanover Square

PESTICIDE EXTENSIONS

(Continued from page 1)

to the commissioner of food and drugs and should give sufficient information about the product to enable the commissioner to determine that its continued use this season will not be harmful.

George P. Larrick, commissioner of food and drugs, said he hopes to act on requests by the early part of July, 1955, so that growers and food-law enforcement officials will know well in advance of July 22 the status of sprays and dusts for which tolerances have not been established.

In most cases, products which now are on the market are safe and evidence to establish this has been developed by the manufacturers and submitted to the U.S. Department of Agriculture in connection with applications for registration of labels. Mr. Larrick said that decisions about extending the effective date of the law will be published in the Federal Register.

Crops treated with a pesticide during the period of an extension, may be marketed after the extension expires. The crop will still be considered legal, if it could have been marketed legally before the extension expired, according to the announcement.

The policy statement says that extensions beyond Oct. 31, 1955, would lead to confusion in 1956. This is true because states ordinarily begin preparing their recommended spray schedules for the following growing season during the fall and winter period. To avoid any confusion in the 1956 growing season, the policy statement recommended that the states prepare spray schedules for that season which suggest:

(1) Pesticide uses that leave no residues at time of harvest.

(2) The use only of those pesticides for which tolerances have been established or exemptions granted.

Du Pont Announces New Fertilizer Material

WILMINGTON—The Du Pont Co. has announced a new fertilizer material which, the firm says, will release adequate nitrogen for plants continuously and uniformly throughout the growing season.

Trademarked "Uramite," the material was developed to a commercial stage by the firm's Polychemicals Department. It has a 38% nitrogen content.

New plant facilities at Belle, W. Va. will swing into full production of the material by mid-summer. It will be available through distributors already established in professional turfgrass and horticultural fields, the company said.

THE MARKLEY LABORATORIES
Max C. Markley, Ch.E., Ph.D.; H. S. Markley, B.Ch.
Complete fertilizer testing service for manufacturers and mixers.
312 Fourth Avenue South, Minneapolis 15, Minnesota — Lexington, Nebraska

Sales Program "PLAYIN' POSSUM"?

Awaken it with PRIVATE LABELS!

If your sales program sometimes "lays down and plays dead" then it's high time you discover the magic of packing *your* products under *your* private labels for distribution in *your* market.

If you're tired of pushing the same old lines (but at varying prices) as every competitor in your territory . . . if you're tired of seeing repeat orders lost to competition then you owe it to yourself to investigate private labels today!

Through private labeling *you* are assured an exclusive on *your* high quality line in *your* market . . . Your customers can't reorder from anyone but YOU!

Private Brands, Inc., *is ready with a complete service to help you "awaken sleeping sales" in your market! It will pay you to investigate today!*

Write, Wire, Phone for Particulars

PBI — PRIVATE BRANDS, INC.
300 S. THIRD - CL-3 - KANSAS CITY, KANSAS

Policy Statement on Pesticide Extensions

TITLE 21—FOOD AND DRUGS

Chapter I—Food and Drug Administration, Department of Health, Education and Welfare

Part 3—Statements of General Policy or Interpretation

Pesticide Chemicals; Date on Which Statute Becomes Fully Effective

Under the authority vested in the Secretary of Health, Education and Welfare by the Federal Food, Drug and Cosmetic Act (secs. 408, 701, 52 Stat. 1055, 68 Stat. 511; 21 U.S.C. 348, 371) and pursuant to the provisions of the Administrative Procedure Act (sec. 3, 60 Stat. 237, 238; 5 U.S.C. 1002), the following statement of policy is issued:

Section 3.40. **Pesticide chemicals; date on which statute becomes fully effective.** (a) The pesticide chemicals amendment to the Federal Food, Drug and Cosmetic Act (68 Stat. 511; 21 U.S.C. 348) is scheduled to become fully effective on July 22, 1955. However, the Secretary of Health, Education and Welfare may extend this date on a product-by-product basis for a time not to exceed 12 months on a finding that conditions exist that necessitate the extension of such additional period. After the amendment becomes fully effective, a raw agricultural commodity in interstate commerce may bear residues of a poisonous pesticide chemical only if:

(1) Under the provisions of the Federal Food, Drug and Cosmetic Act a tolerance has been established for residues of the pesticide chemical, or it has been exempted from the requirement of a tolerance; and

(2) If a tolerance has been established, the residues are within the tolerance level.

Numerous tolerances for residues of pesticide chemicals—and some exemptions from the requirement of a tolerance—have been established. However, tolerances or exemptions have not been established for some pesticide chemicals that are employed in agriculture, and it is not possible at this time to determine whether tolerances will be established for them before the end of the current growing season. Some of these pesticides have been recommended by certain state officials for use on crops throughout the 1955 growing season. Agriculturists, pesticide manufacturers and distributors, and food-law enforcement officials need to know the status of these pesticides under the amendment prior to July 22, 1955, so that they will know whether the pesticides should be employed throughout the 1955 growing season.

(b) The Department of Health, Education and Welfare is prepared to consider requests for an extension of the effective date of the law for specific pesticides. The following criteria, among others, will be used in evaluating and acting upon such requests:

(1) There should not be an extension of the effective date of the amendment for uses of pesticide chemicals for which tolerances have already been established.

(2) The effective date of the amendment should be extended for a pesticide chemical only upon a finding, based on a study of the available facts about the chemical and its toxicity, that the interests of public health will not be jeopardized by the extension.

(3) There should be evidence about the amounts of residues which remain in or on food from use of a pesticide chemical and about its chronic toxicity before an extension is granted.

(4) Extensions should not be granted for a pesticide chemical which causes alarming symptoms in test animals (cancer or blood disorders, for example) in any dosage, unless experimental data show a level of feeding to test animals that is safe.

(5) Where a tolerance has been set for residues of a pesticide chemical on one or more raw agricultural commodities under the Federal Food, Drug and Cosmetic Act, and the other criteria of this statement of policy are met, the effective date may be extended for other uses of the pesticide chemical.

(6) Extension should be granted only for uses of a pesticide chemical registered with the Department of Agriculture under the Federal Insecticide, Fungicide and Rodenticide Act of 1947 (61 Stat. 163; 7 U.S.C. 135) prior to the 1955 growing season (prior to May 1, 1955).

(7) Extension should be granted only to the end of the 1955 growing season, because longer extensions would result in confusion during the 1956 growing season. The principal growing season in the United States ends by Oct. 31.

(8) Notice of the decisions of the department on requests for extensions will be published in the Federal Register.

(c) Each request for an extension should be addressed to the Commissioner of Food and Drugs and should give:

(1) The name and chemical composition of the pesticide chemical for which extension is requested.

(2) A list of uses for which extension is requested and evidence that these uses were registered under the Federal Insecticide, Fungicide, and Rodenticide Act prior to May 1, 1955.

(3) Information about the amounts of residues that are expected to remain on raw agricultural commodities from these uses.

(4) Available information which indicates that these residues will not jeopardize the public health.

(5) A statement of the reason(s) a tolerance or exemption from the requirement of a tolerance has not been requested.

(d) In order that decisions on requests for extensions may be published before July 22, 1955, requests and supporting data should be received by June 27, 1955.

(e) Use during the 1955 growing season of a pesticide chemical for which extension is granted may yield a raw agricultural commodity which bears residues of the chemical. In such case, the raw agricultural commodity will not be considered adulterated within the meaning of the act even though it is marketed after the growing season, provided the commodity bearing such residues would have been legal in interstate commerce during the 1955 growing season.

(f) The department believes that extensions beyond Oct. 31, 1955, would lead to confusion in 1956. It recommends that states prepare spray schedules for the 1956 growing season which direct (1) pesticide uses that leave no residues at time of harvest or (2) the use only of pesticides for which tolerances have been established or exemptions granted under the Federal Food, Drug and Cosmetic Act.

Date: June 3, 1955.

OVETA CULP HOBBY,
Secretary.

H. R. Dinges

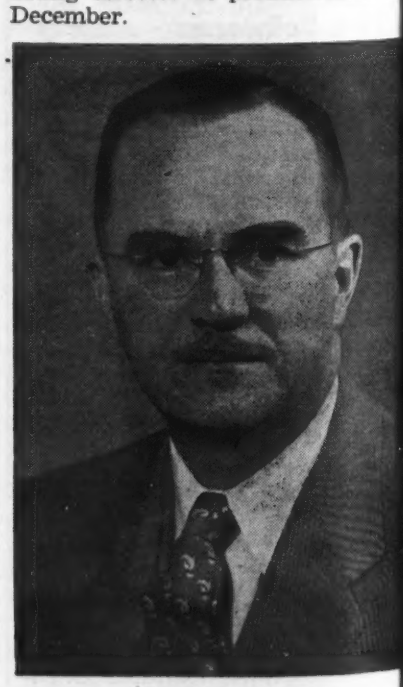
H. R. Dinges, H. E. Bingham in New Spencer Posts

KANSAS CITY—Spencer Chemical Co. has announced two promotions in top sales management and the reorganization of its sales division into seven departments.

H. R. Dinges, formerly assistant general sales manager, has been named general sales manager, and H. E. Bingham, who was acting director of product sales, has been named general manager of sales services. Mr. Bingham will head the activities of four departments—sales development, agricultural chemicals; sales development, industrial chemicals; traffic and advertising. Both men will report directly to J. E. Culpepper, vice president in charge of sales.

Mr. Dinges joined Spencer in 1945 as industrial sales manager, after serving for some time as southern district sales manager with the Mathieson Chemical Corp. He later became director of product sales at Spencer and in December, 1954, took over the reins as assistant general sales manager.

Mr. Bingham joined Spencer in July, 1946, as traffic manager, after having served the Pratt-Whitney Aircraft Corp. of Missouri in the same capacity. In June, 1947, Spencer named him director of traffic, which position he held until he was named acting director of product sales last December.



H. E. Bingham

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

Informational Sources Important in

Acceptance and Use of Fertilizer in Iowa

EDITOR'S NOTE: The accompanying article contains the results of a study conducted under Tennessee Valley Authority activity. The work reported here was conducted by Iowa State College under a contractual agreement with the TVA. Directing the study was Marvin A. Anderson, associate director, agricultural extension service, Iowa State College. E. L. Baum, agricultural economics branch, TVA, assisted Mr. Anderson in the preparation of this article.

v v

Introduction

In 1953 Iowa State College and the Tennessee Valley Authority undertook a research project designed to identify the factors causing Iowa farmers to accept modern fertilizer practices. The other objective of this study was to identify the sources that farmers use to secure information on new fertilizers when they become available on the market.

Fertilizer use by Iowa farmers in recent years is an example of a practice change of considerable proportion. The tonnage used in the state rose from 9,000 tons in 1938 to over 600,000 tons in 1953. This rapid adoption took place at a time when farm prices were generally on the upswing and when favorable fertilizer crop price ratios existed. The adoption of research findings in more efficient crop production and soil management practices, and improved mechanization coupled with a more favorable capital position provided Iowa farmers with an opportunity to cash in on higher yields and greater efficiency in production.

The data used in this study were obtained from 532 Iowa farm interviews, secured from a stratified random sample designed by the statistical laboratory at Iowa State College. Random sampling is a method of selecting a given number of farms from a population so that every farm within the population has an equal chance of being selected. The use of this statistical technique enables the researcher to draw inferences concerning fertilizer use and acceptance by all Iowa farmers from a relatively small sample.

Members of agronomy, economics and statistics departments at Iowa State College collaborated with personnel in the division of agricultural relations, Tennessee Valley Authority, in preparation of the questionnaire and analysis of the data. The farmer interviews were conducted during July, 1953 by the Iowa State College statistical laboratory personnel.

General Considerations Of Practice Acceptance

When, where, and how do farmers get information on new practices (in this case, fertilizer use)? This is an important question for county extension workers, specialists and others concerned with the task of extending research information to farm people. To be effective, the educator must not only be fully informed on the technical aspects of the new practice, but he must also have a good understanding of the processes involved in the diffusion of ideas. Considerable time ordinarily elapses from the time an innovation is perfected for use until this innovation becomes an accepted practice.

In order to understand this time lag, agricultural research workers have evaluated the effectiveness of the various methods that might be used to achieve changes in production practices. They have also studied the stages and mechanisms involved as ideas travel the path of a new innovation to a commonly accepted practice. Although considerable information is available, new communication methods and changes in the status of individuals and the groups make it necessary to constantly appraise this diffusion process.

Process of Practice Acceptance

Research workers studying the diffusion of ideas as a problem in communication are concerned with measuring the relative effectiveness of various contacts or media which are influential in the acceptance of a particular practice or practices. Students of practice acceptance generally recognize four principal stages which an individual encounters from the time he first learns of the new ideas until final acceptance. They are (1) the awareness stage, (2) the interest stage, (3) the trial stage, and (4) acceptance of the practice.

The first stage is in the awareness of the new practice or method; that is, the stage when interest is aroused. The second stage finds the individual seeking more information about the practice or method. Third, the individual is satisfied that it might work for him and he is willing to try the idea. He may require equipment or the skills necessary to move into the trial stage. The fourth and final step involves acceptance, which includes the approval as well as the adoption of the practice or method. Economic rewards or social or personal satisfaction are necessary for this final step to be complete.

Some research workers have suggested that there is one additional stage involved between the interest and trial stage. It is described as a mental application stage, a stage of weighing alternatives and decision making.

Media Effectiveness in Practice Acceptance

Considerable research work has been done to identify the causative factors involved in practice acceptance. In a general way, they may be placed into four groups: (1) mass media, (2) agricultural agencies, (3) neighbors and friends, and (4) salesmen.

Mass media include magazines, newspapers, radio, television, and publications. Agricultural agencies include the Extension Service, Farmers Home Administration, Agricultural Stabilization and Conservation Service, and other governmental agencies which have functions of disseminating information. The other two groups are self-explanatory.

The different media are relatively more important in one stage than in another. In summing the research information available on the different media for the different stages, the following order of importance emerges for the different stages.

Stage	Order of Importance of Media
I. Awareness	1. Mass media 2. Agricultural agency 3. Neighbors and friends 4. Salesmen
II. Interest	1. Mass media 2. Agricultural agency 3. Neighbors and friends 4. Salesmen
III. Trial	1. Neighbors and friends 2. Agricultural agencies 3. Mass media 4. Salesmen
IV. Acceptance	1. Neighbors and friends 2. Agricultural agencies 3. Mass media 4. Salesmen

Mass media rank first (importance ranking refers to the frequency that the media is named as the causative factor) in calling attention to a new practice and in providing early information about the practice. Agricultural agencies for the most part have the responsibility for extending new facts to farm people, but rank second in importance. Neighbors and friends, and salesmen are apparently relatively less important in the early stages of practice acceptance.

When an individual is considering trying a new practice his neighbors and friends become the most important informational source, whereas mass medium is third in rank of importance. This is likewise true in the fourth stage where practice acceptance occurs.

Sequence and Roles in Practice Acceptance

Research workers have also described the sequence that takes place as the "idea" moves out from the position of a new practice to one widely accepted. The sequence of practice adoption appears to take place in this order:

1. The Innovator—This individual is always willing to try something new. He is the fellow who is usually knocking on the door of the research worker to find out when a new practice may be available. He is willing to accept any risk to be first, and since this is true, he is frequently criticized by his neighbors. The innovator is most often the one who owns a large farm and has high social and economic status. He accepts leadership roles outside as well as within his community. Usually he has had the benefit of college training.

2. The Early Adopter—Although usually not the first to accept the practice, the early adopter is considerably ahead of the majority of farmers. As contrasted with the majority he is, on the average, younger, has more education, has a higher social participation, reads more magazines and newspapers, and participates more actively in farm organizations.

3. The Informal Leader—The informal leader is the third in the sequence of practice adoption. He is not usually a designated leader on either an appointive or elected basis; however, he has many followers in his neighborhood. This farmer usually is not the innovator. He has an average education and experience,

(Continued on page 15)

SUMMARY

What factors cause a farmer to begin using fertilizer?

"Other farmers" (neighbors) are the most important source of information influencing the acceptance of fertilizer use.

The results of this study show that farmers need to see and hear about the increased crop yields and greater returns from fertilizer use experienced on neighboring farms.

This important relationship between "other farmers" and "fertilizer acceptance" demonstrates the importance of conveniently located farm demonstrations of fertilizer and fertilizer practices, if fertilizers are to be used efficiently by increasing numbers of farmers.

Farmers on smaller farms and those with less formal education were more frequently dependent on the experiences of other farmers in appraising fertilizer use practices. Fertilizer users on the average had larger farms, more capital, more formal educational experience, were somewhat younger, and had fewer years of farming experience than nonusers.

* * *

When farmers learn of a new fertilizer, where do they go to find out more about it?

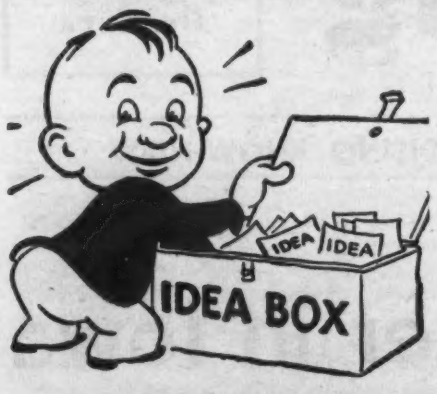
Iowa farmers go to the state college, fertilizer dealers and salesmen to learn about a new fertilizer.

The important role that Iowa State College occupies as a source of information on new fertilizers is a result of the soil fertility research and extension programs, coupled with a greater emphasis on soil testing, conducted in all important soil areas of Iowa.

The results of this study indicate the strategic and increasing importance of fertilizer dealers and salesmen as sources of technical information during this period of rapid technological changes in the fertilizer industry.

Better Selling

Richer Sales Fields for Dealers



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6258—Bulk Scale

Recently the Burrows Equipment Co. built a special 1-ton capacity Eze Move bulk scale for Turner Seed & Supply Co., Villa Grove, Ill. This picture taken at the factory prior to making shipment shows the capacity

of the equipment. The scale will be used for receivingg, handling, weighing bulk phosphate, super and rock, potash, sulphates and various forms of nitrate by Turner. The unit combines a large size platform scale with a stainless steel hopper. To secure more details about this scale check No. 6258 on the coupon and mail it to Croplife.

No. 6257—Chemicals Handling

A booklet entitled, "Materials, Machines & Motions" has been compiled by Sauerman Bros., Inc. The information in the booklet relates to handling of chemicals. It describes in words and pictures the company's machinery in use by such firms as International Minerals & Chemical Corp., Duval Sulphur & Potash Co., Lion Oil Co. and Davison Chemical Company Division of W. R. Grace & Co. Methods of handling phosphate, ammonia and potash are described. To secure the 24-page booklet check No. 6257 on the coupon and mail it to Croplife.

No. 6256—Irrigation Pump Bulletin

A new bulletin describing its line of pumps for irrigation service is available from the Deming Co. The bulletin describes deep well turbines, end section centrifugals, portable centrifugals, and portable self-priming centrifugal pumps with capacities up to 3,500 gal. per minute. Most models are available skid mounted or on rubber tired mounts equipped with gasoline engine. The bulletin gives tables for determining: The amount of water needed; how often to irrigate; when to irrigate and rate of application; friction loss of water in pipe; and equations required for determining other factors related to proper pump use and selection. Secure the bulletin by checking No. 6256 on the coupon and dropping it in the mail.

No. 5210—Bag Handling Poster

A poster designed to curb careless handling of multiwall paper bags has been prepared by the Fulton Bag & Cotton Mills. The poster, printed in red and black, is designed for use on bulletin boards and in other plant areas. Cartoon technique is used in the illustrations and the text is brief and to-the-point. The poster may be obtained by checking No. 5210 on the coupon and mailing it to this newspaper.

No. 6259—Nitrogen Solution Pump

The John Blue Co. has recently announced production of its new nitrogen solution pump, model "NSF". This pump is fully enclosed and has approximately 2½ times the output of the "NSC" which it supersedes. The pump is ground driven and, when mounted on one of the Blue trailer type rigs (such as the Nitro-Shooter series "20-NS") up to 75 gal. of solution per acre may be applied when fertilizing four 40-in. rows, the company announcement states. The pump is designed for use with both non-pressure and pressure solutions (including aqua ammonia). All working parts operate in a bath of oil inside an inclosed, dust tight crankcase. A "double lip seal" protects the crankshaft from solution and prevents contamination of oil, it is claimed. The pumping end is constructed of non-corrosive materials such as stainless steel and aluminum. To secure more complete details check No. 6259 on the coupon and mail it to Croplife.

No. 5164—Bag Opening Device

The Hudson Pulp & Paper Corp. has announced a new multiwall bag feature, called by the trade name "Snap-Open Sack." "Bag users will be able to open multiwalls with a quick snap of the wrist," a company spokesman said. The quick-opening device, on which a patent has been applied for, is achieved by placing

a series of small perforations in one corner of the bag under the tape and near the sewing line. By grasping the tape at this corner and pulling sharply upward, an opening is instantly started. It can be stopped and held at any point convenient for controlled spout pouring. The bag is available in both open-mouth and valve types. Check No. 5164 on the coupon, clip and mail it to secure more complete details.

No. 6254—Insect Display Box

An insect display box designed by an entomologist to aid in the identification of common cereal pests is offered by the Mid-Western Spray Chemical Co., Inc. Produced by the Bio-Preparations Co., the box is 8½ in. wide, 12 in. long and 2 in. deep. It contains 12 detailed and enlarged color drawings of these pests in

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6261—Ant Powder

A consumer package of ant powder containing dieldrin has been announced by J. T. Eaton & Co., Inc. The package, which is a circular hand-squeeze applicator, weighs 3 oz. and its trade name is Rough and Ready ant powder. To secure more details about this product check No. 6261 on the coupon and mail it to Croplife.

No. 6162—Sprayer

A heavy-duty sprayer, called by the trade name, Hy-Row sprayer, has been developed by the O. W. Kromer Co. The sprayer features a 25 h.p. driving engine and is said to be suitable for cotton and tobacco spraying, as well as corn borer control and all types of custom spraying. It has a heavy-duty low-speed tractor transmission which allows continuous operation in all speeds. The clutch is a Rockford disc oil clutch. The tank and booms are claimed to be resistant to corrosion and rust from

Send me information on the items marked:

☐ No. 5164—Bag Opening Device	☐ No. 6257—Chemicals Handling
☐ No. 5210—Bag Poster	☐ No. 6258—Bulk Scale
☐ No. 6164—Crabgrass Film	☐ No. 6259—Pump
☐ No. 6167—Bulletin	☐ No. 6260—Meter
☐ No. 6168—NH_3 Hoses	☐ No. 6261—Ant Powder
☐ No. 6254—Insect Display Box	☐ No. 6162—Sprayer
☐ No. 6255—Chemical Booklet	☐ No. 6169—Seed Treatment
☐ No. 6256—Pump Bulletin	☐ No. 6270—Nitrogen

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

adult and larval stages. Three actual specimens of each pest are mounted on pins in the box. Insects shown include the rice weevil, granary weevil, lesser grain borer, the cadelle, saw-toothed grain beetle, angoumois grain moth, Indian meal moth, flat grain beetle, confused flour beetle, yellow meal worm, black carpet beetle and the cereal mite. Because of the small size of the mite, actual specimens are not included. It is adaptable for display in elevators and farm stores where fumigants are sold and for educational purposes in schools and industrial plants. To secure price and other information please check No. 6254 on the coupon and mail it.

No. 6169—Seed Treatment

A new six-page folder on how to treat seed with Heptachlor has been published by the Velsicol Corp. The folder, which is free upon request, demonstrates how Heptachlor is used, when to treat seed, how to treat seed, and points out special advantages of Heptachlor for seed treatment. A table shows the rates of application for standard Heptachlor formulations for wireworms, seed corn maggots, southern corn rootworm and sugar beet root maggots. According to the information in the folder, the product insures protection of cucumber seeds, corn, beans, oats, wheat, onions, sugar beets and other seeds. The folder is available by checking No. 6169 on the coupon and dropping it in the mail.

No. 6270—Nitrogen

New literature has been prepared by the Grand River Chemical Division of Deere & Co. on its new product, Vitrea. The literature describes the product as being composed of "45% nitrogen fertilizer from urea." Prilled into a bead-like shape, the product is called "non-caking" and "free flowing." One folder contains recommendations for its use on rice with sections devoted to its use in Texas, Arkansas, Louisiana and California. Another folder has recommendations for its use on corn, sorghums, small grains, pastures, grass crops, cotton and sugar beets, the number of pounds to apply and common methods of application. Secure the literature by checking No. 6270 on the coupon and mailing it to Croplife.

No. 6260—Moisture, Fertility Meter

A new descriptive catalog is offered by Industrial Instruments, Inc., on soil moisture measurement and irrigation control. The catalog describes in detail the various methods of soil moisture and fertility measurements based upon the electrolytic conductivity principle as developed by Dr. George Bouyoucos. The publication also lists the necessary equipment for the various tests and controls, including the Bouyoucos cells, moisture meter and irrigation controller, etc. The catalog may be obtained by circling No. 6260 on the coupon and mailing it to this newspaper.

No. 6167—Insecticide Bulletin

Prentiss Drug & Chemical Co., Inc., has just published an information bulletin on Prentox Pyronyl "75", an oil-free pyronyl concentrate. The bulletin states that the product is a new development in the field of pyrethrum insecticides, "incorporating the rapid killing power and complete freedom from toxicity of pyrethrum and the stabilizing and insect repellant activity of piperonyl butoxide. It contains no kerosene, no odorless base oil, nor any other solvent." The most important area claimed for the use of Prentox Pyronyl "75" will be in the field of grain protection. It provides a method whereby a grain protectant entirely free of oil may be applied directly on the grain. To secure the bulletin check No. 6167 and mail it to this publication.

No. 6168—NH₃ Hoses

Manufacturers and users of anhydrous ammonia as fertilizer have available three new types of hose manufactured by the Thermoid Co. Amoflex type No. 1 for bulk loading is made in 1¼, 1½ and 2 in. ID sizes and handles working pressures of 350 to 400 psi—available in 50-ft. lengths only. Amoflex type No. 2 for handling anhydrous ammonia in delivery and storage up to 350 psi is manufactured in ½ in. ¾ in. and 1 in. ID sizes—available in long lengths. Amoflex type No. 3 for applying ammonia from portable field tanks made in ¼ in. and ⅜ in. ID—is also available in long lengths and permits working pressures up to 150 psi. To secure more complete information check No. 6168 on the coupon and mail it to this newspaper.

No. 6164—Crabgrass Film

A new slide film in sound and color titled, "Prevent Crabgrass and Other Weeds with Crag Herbicide-1" is now available. This 7-min. film will be lent without charge by Crag Agricultural Chemicals, Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. To secure the film on loan check No. 6164 on the coupon and mail it to this publication.

No. 5138—Pump

Maintaining a constant volume of flow despite fluctuations in water pressure is the function of a new variable cavity pump built by Hypro Engineering, Inc. When the pressure in the pump reaches a predetermined point, a spring loaded end plate moves outward, increasing the length of the pump cavity and enlarging the clearances between the ends of the rotor and the end plate varying the pressure. To secure more complete details about this pump check No. 5138 on the coupon and mail it.

No. 6255—Chemicals Booklet

Its family of chemical products for agriculture are depicted in words and pictures in a booklet, "The Story of the Chemicals You Live By," published by the Diamond Alkali Co. The booklet, in its fourth edition, contains 24 pages and one entire section is devoted to herbicides and insecticides manufactured by the company. The booklet is available without charge. Check No. 6255 on the coupon and drop it in the mail.

Farm Revolution Under Way in Southern Illinois

URBANA, ILL. — An "agricultural revolution" is taking place in the claypan area of southern Illinois. Farmers are attacking the claypan problem with improved farming methods, says J. E. Wills, farm economist at the University of Illinois.

Income and production are far higher in the area today than anyone ever dreamed of only a few years ago. Mechanization and fertilization are playing a big part in getting more land into production, says Mr. Wills. Farms are getting bigger. There is very little idle land left.

High-profit crops like soybeans are replacing the traditional redtop on many farms. Soybean acreage in the area multiplied about 10 times in the 20-year period from 1929 to 1949.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

About 900 attended the preliminary meeting of the National Plant Food Institute, being formed by the consolidation of the National Fertilizer Assn. and the American Plant Food Council. . . . W. E. Shelburne was named president of Armour Fertilizer Works. . . . New president of Pennsylvania Salt Manufacturing Co. is William P. Drake, 42, youngest president in Pennsalt's 105-year history.

Prospects are that the U.S. may produce over four million tons of synthetic nitrogen annually by Jan. 1, 1957, it was confirmed by U.S. Department of Agriculture officials. . . . Production of pesticides in the U.S. for the first three months of 1955 showed increases ranging up to 100%. . . . The high value of controlling cotton insects with chemical insecticides has been clearly demonstrated throughout 16 years of experiments at Waco, Texas, the USDA reports.

A survey taken by Virginia's state chemist, Rodney C. Berry, indicated that more states are permitting the sale and distribution of fertilizer-pesticide mixtures than were so numbered in a similar survey taken in 1954. Six more states reported that mixtures were being sold within their borders than were noted in last year's questionnaire.

Gypsy moth and budworm spraying projects were being undertaken in Maine and New Mexico. More than a half million acres of timber was set for treatment and about that many pounds of DDT were to be used. . . . USDA announced promising results from two new systemic insecticides for control of cotton pests. . . . John E. Sanford, president of Armour Fertilizer Co., Atlanta, Ga., retired after a career of 45 years in the fertilizer business.

John F. Gale, economist and editor for the National Fertilizer Assn., Washington, D.C., joined the staff of Garden Foundation, Inc., Baltimore, Md. . . . Dr. Edward L. Chandler was appointed to the technical staff of Diamond Alkali Company's Chlorinated Products Division, Cleveland. . . . The University Fertilizer Corp. was formed in Madison, Wis., with authorized capital stock of 1,250 shares, no par value.

Davison Chemical Co., Division of W. R. Grace Co., announced that a new professorship has been established at the Johns Hopkins University, Baltimore, to be known as "The Grace Chair of Chemistry." The position will be filled by Dr. Paul H. Emmett of the Mellon Institute of Industrial Research, Pittsburgh.

Fertilizer consumption, tonnage-wise, was down 2.73% for the 1953-54 fertilizer year, according to the annual USDA report published in the May 30 issue of Croplife. However, consumption of plant nutrient materials was up 4.42% over last year's record level. The middle west continued to be the area of most increase in consumption in both actual tons used and percentagewise.

Escambia Bay Petrochemical Co. broke ground in Florida for its new $25 million plant. It will produce 250 tons anhydrous ammonia daily when completed next January. . . . The U.S. Forest Service sent out bid invitations for spray operations and chemicals to be used in a spruce budworm control project in Montana. Over 2 million acres are to be treated.

Robert Q. Parks was named general sales manager of Grace Chemical Co. He will continue to work out of Memphis, Tenn. . . . Glenn O. Middleton was appointed manager of the Dubuque, Ia., sales office of Virginia-Carolina Chemical Corp. C. Aubrey Clayton was made assistant manager of the Dubuque office.

Croplife's issue of May 23 reported that the Hoover Commission for the reorganization of the executive branch of the federal government has criticized the operations of TVA as being in competition with private fertilizer business. . . . Pittsburgh Coke acquired the agricultural chemical program of the Ethyl Corp.

The Radco fertilizer companies of southwestern Iowa merged with Chemical Enterprises, Inc., New York. . . . Charles E. Wilson was named chairman of the board of directors of W. R. Grace Co., marking the first time in 101 years that anyone other than a member of the Grace family has held this position.

The U.S. Department of Agriculture in its "Fertilizer Situation" report, said that the 1954-55 supply of nitrogen will be about 5% higher than that of the previous season. Potash was reported to be 0.6% higher, but the phosphorus supply was estimated to be down 3.3%.

Construction of the first nitrogen products plant in Indiana began May 9 by Calumet Nitrogen Products Co. near Hammond. It is reported to be the largest plant in the U.S. to make anhydrous from refinery by-product hydrogen. . . . An expanded market for grain protectants was indicated when the Food and Drug Administration and USDA began to promote higher sanitation standards for the nation's cereal supplies.

A contract for construction of its second contact acid plant at Searsport, Maine, was let by Northern Chemical Industries, according to J. E. Totman, president. The plant will have a rated capacity of 100 tons a day of 100% sulfuric acid. Combined with present facilities, NCI will have a total rated daily capacity of 170 tons a day. Tank storage will be increased to 4,000 tons.

C. J. Watts, Jr., joined the Agricultural Chemicals sales department of Commercial Solvents Corp., New York. He was formerly with Davison Chemical Co. . . . J. C. Crissey, manager of the Soil Building Division of GLF Exchange, Inc., Ithaca, N.Y., was honored at a banquet recently in recognition of his 30 years of service. . . . Mississippi River Chemical Co., St. Louis, named Richard G. Powell as technical service representative.

Oscar Schoenfeld was as sullen as a spoiled child when he came home that July afternoon. Being Saturday, he could look forward to a day of relaxation, but Oscar merely grunted a greeting to his anxious wife, then strode to the window and stood staring moodily.

"Oscar," Minnie said anxiously and dutifully, "supper is ready."

Stern-faced Oscar turned from the window, walked to the dining room table and sat down. "Hm, sauerbraten!" he said approvingly. "Limburger cheese. Pickled beets! Apple strudel. Lager! Ach, now that's a good meal, Minnie. None of this—this crazy Irish stuff like Mulligan's stew!"

Minnie was dutiful, but also intuitive. Mention of anything Irish by Oscar meant only one thing to her—trouble, or arguments of some sort between her husband and Pat McGillicuddy, his Irish partner. She could even interpret Oscar's restless mumblings as he slept—especially when one night he thundered in a dream, "County Cork! I'd sell the whole place for a nickel!"

It was quite obvious to Minnie that stolid Oscar, though a steady provider, and somewhat on the stubborn side at times, had no pronounced affection for the gay Irish race, and one Irishman in particular, even though he found himself associated profitably in business with that individual.

After Oscar had finished his second cup of coffee, he lay down his napkin. "Minnie!" he snorted. "Bring out my metal box."

Minnie's heart thumped rapidly. The metal box! It contained their bank books, their government bonds, a record of their insurance policies, and other valuable papers. What could Oscar want with it? Why was he so perturbed?

Obediently she quickly cleared the table, then pulled down the shades throughout the first floor of the house. She disappeared into the kitchen, and then came forth later with the metal box inside a flour sack. Minnie always thought a burglar would not look into such a thing as a stuffed flour sack.

Worriedly she did the dishes while Oscar sat at the dining room table going through bank books, bonds, etc. and jotting down figures.

"Ach," he said loudly. "I can't take a chance. I'm 45. I'm too old to go into business for myself without a big reserve."

"In business for yourself!" echoed Minnie, standing in the doorway to the kitchen, wiping her soapy hands on her apron.

"Yes, I can hardly stand it any longer with Pat!" snapped Oscar. "Now he wants to put on an Irish day at the store. And me, a German, and I should sit through all that Irish foolishness."

"Well, well, he is Irish and you are German, but both of you are American," Minnie said with a rare approach to logic. "What—what difference is it that you both come from different countries?"

"Minnie!" reproved Oscar. "You know I don't like Irish stuff. I'm filled up with it. Now Pat wants to make use of—of all that stuff in the demonstration garden, the peas, the beans, the rutabagas, turnips and all that. He—he wants to put on an Irish stew dinner and hold an Irish Day for all customers—everybody."

"Oh!" ventured Minnie, slowly thinking over this possibility.

"Some farmer is going to donate ham and Pat wants split pea soup with hambone," snorted Oscar, "and then he also wants Mulligan's stew with lots of onions. Some fool farmer gave him some beef for the stew. What can I say? It doesn't cost much, with meat donated and vegetables from the garden. You and Nora and her relatives are supposed to help serve the meal on a Saturday afternoon."

"I'll help if you say so," Minnie promised.

"And he wants that fool orchestra of his to play Irish songs, and he wants Irish sales specials on tools, fertilizer and other stuff. He even wants to offer $5 out of his own pocket for the best Irish jigger."

"Maybe, it will bring in lots of people," Minnie said in a low voice. "Maybe they'll buy lots of things."

"That's just it," Oscar thundered. "Why do we always have to give something free to get extra business? Why do we always have to entertain people, make a regular circus out of things? Why can't we just set a price on things and run a nice, businesslike place? That's the way it should be. Not this crazy promotion stuff."

"Maybe people like to get something for nothing," Minnie replied timidly. "They are not all like us, Oscar. And we go eight miles to Cedarburg to get that cheap Donner & Blitzen beer for you, too."

"Minnie!" Oscar was offended. "They don't give that beer away. We pay for it. The Irish stew dinner is free."

Minnie nodded, indicating she saw the difference.

"Besides," Oscar pouted, "what's so good about Mulligan's stew? It doesn't taste so good as pigs' knuckles, sauerbraten, mettwurst or hausenpfeffer. That's what I like, Minnie."

"Maybe you could have a German day at the store later on," suggested Minnie hopefully. "Then he could show people how good all those things are to eat."

"No," snapped Oscar. "I wanted to do that. I thought of it. But then that Pat he tried to soft soap me. He suggested a German Day later on. So I won't do it. Why is it that he has to think of everything? Why not me once in a while?"

"He's the promoter. It's his business to think up those things, Oscar."

"Yah," growled Oscar, "everybody is always saying, 'nice goin' on that sale, Pat. Nice this, and nice that.' Always patting him on the back. Nobody ever comes around and pats me and says, 'Nice goin', Oscar. That's holdin' down expenses and makin' a profit."

"No, I don't do anything. I only see that money comes in so we can pay the wages of the men and have a little left over for ourselves. I don't do anything. That's what they think."

Minnie's worry suddenly evaporated, as she thought of her perfect answer. "Oscar," she said. "You should worry what they think and what they say. You have the home paid for. You have the bonds. You have the money in the bank. How many can say that, yah?"

Oscar's chest expanded. His eyes glowed, and he grinned. "Minnie," he said. "You are right. Let's turn on the electric fan a little. It is kind of hot tonight, and we can afford the fan for ten minutes, maybe."

Iowa Dealer Finds Bulletin Profitable

Cliff McGhee, owner of the McGhee Farm Center, Dubuque, Iowa, knows that farmers do not always read the labels on the cans of pesticide that they buy. He knows that some farmers, too, have to be sold on these products through the dealer's action in giving them information a little at a time, and in language the farmer can understand.

In getting seasonal farm chemical information to farmers, Mr. McGhee has very good results through the issuance of a monthly bulletin to about 2,000 farmers, a bulletin which details some of the products which he has for sale.

Mr. McGhee also has a thriving seed business, selling about $100,000 worth of field seeds per year. He has been in business for many years, and farmers have come to have faith in the seeds Mr. McGhee sells. They also find that his recommendations on farm chemicals are worth listening to.

Mr. McGhee has a large stock of sprayers on an island in his roomy store, with plenty of chemicals on the wall shelves. The farmer who comes here for weed control advice gets it, and can get all the materials needed for the job, too.

Seasonally Mr. McGhee does some radio advertising over a local station with copy dispensing advice to farmers on seeds, soils and farm chemicals.

Corn Contest Yields

ST. PAUL—Corn yields averaging about 108 bu. per acre were harvested by 175 Minnesota farmers who reported their results in the 1954 Extra Yield Corn Contest, sponsored by the University and the Farmer Magazine. The three top contestants produced more than 160 bu. per acre each. An average of 500 lb. fertilizer was used by the corn growers competing in the contest.

STUDY LEAF MINER CONTROL

BERKELEY, CAL.—The rice leaf miner is now under attack in California. The insect, which first threatened rice fields two years ago, is being studied at the College of Agriculture at the University of California, by Albert A. Grigarick, Jr., graduate student in entomology at Davis, who is working with W. Harry Lange, associate professor of entomology.

By RAYMOND ROSSON
Washington County, Tenn., County Agent

"I'm so thrilled," said one of the city's young matrons last week. "We've decided to go to the beach for two weeks' vacation." "You lucky girl," an acquaintance remarked. "And how do you do it?"

"As a matter of fact, fertilizer was responsible for our wonderful trip."

"Fertilizer? Your husband does not sell fertilizer."

"No, but he's interested in fertilizer just the same. He told me the story. You see, my husband sells furniture, and last week he sold a friend of his the furniture and everything to furnish a nine-room house. The man who bought this furniture had just sold two brand new cars to a machinery dealer, one for his son and another for his daughter, who is getting married. The machinery dealer had just delivered a tractor, mower and a pick-up baler to one of his farmer customers."

Now here is where the story started. This farmer and his son contacted the fertilizer dealer and the dealer called in the county agent, and all of them came up with this conclusion: The farmer should use double the amount of fertilizer for his 40 acres of corn, 20 acres of alfalfa and the 30 acres of permanent pasture.

That is twice what he had ever used, and in doing so he produced 20 bu. more corn per acre. His alfalfa yielded an extra ton per acre and the permanent pasture put on 75 more pounds per steer for the 25 steers.

This of course happened last year, but it is just now getting back to Main Street.

"My husband told me that the money the farmer received for his cattle, corn, etc., was new money coming right out of the good earth. So you can see, a portion of this beef and corn money finally wound up in our vacation," the matron added.

I had never thought of it before and I wonder if all the dealers on Main Street have given fertilizer credit for their increased sales? The fertilizer, seed and insecticide dealers are important people. Yes, they are V.I.P. (very important people)

Corn Borer, Hoppers Threaten Iowa Crops

AMES, IOWA—The corn borer and grasshopper threat to Iowa crops has arrived, according to Dr. H. M. Harris, state entomologist and head of the Department of Zoology and Entomology at Iowa State College.

The advanced crop season, a week to 10 days earlier than normal because of warm, dry weather has been ideal for development of these crop pests.

Dr. Harris said that the worst grasshopper infestation is in southwest Iowa and in most of the counties along the western edge of the state but the infestation also is bad in many other areas.

FARM SERVICE DATA
Extension Station Reports

When alfalfa crops fail, farmers
en blame severe winter weather,
t soil, inferior seed, or competition
m grasses. But the real cause of
crop failure may be poor nutri-
n, says O. J. Attoe, University of
sconsin soils specialist.
Mr. Attoe reports that alfalfa
nds can frequently survive un-
orable conditions and remain pro-
tive for a surprising number of
rs when the soil is properly limed
l fed with phosphate and potash
tilizer.
Money-making hay crops have been
duced for seven years in a row
Wisconsin land once thought too
r to grow alfalfa, Mr. Attoe says.
e soil has been built up by a good
nagement program that includes
e and high-potash fertilizer.

**Yields of four tons per acre have
en harvested on fertilized land,
hereas the yields on the unlimed
d unfertilized fields have aver-
ed only about 1½ tons per acre.**

Mr. Attoe says the soil-building
gram has returned $4 to $5 for
ry dollar invested in fertilizer.
d from all indications, the fer-
zed alfalfa stands will remain pro-
tive for some time to come by
-dressing with a high-potash fer-
zer, he reports.

★

Farm trials in North Dakota, as
l as North Dakota Agricultural
llege Experiment Station work, in-
ate the profitable results on forage
ps that may be expected with
rogen fertilizers, according to Vir-
Weiser, soils agent of NDAC Ex-
sion Service.
In eastern North Dakota double
triple yields of forage, compared
h unfertilized grass, may often
obtained with 100 to 130 lb. per
e of nitrogen," he says.

**"This may mean from 1 ton to
o tons per acre increased hay
elds or, usually, in the neighbor-
od of 30 lb. hay for each pound
nitrogen applied. The fertilizer
st for a ton of extra hay pro-
ced averages about $10.**

In western North Dakota wider
iations occur. Here yields may
y from slightly better to four
es as much as the unfertilized
ss where 60 to 100 lb. per acre
nitrogen are applied. The increased
yields to expect may be from
to ¾ ton with 50 lb. nitrogen and
to a ton for 100 lb. nitrogen.
For the low rate of nitrogen use,
m 10 to 35 lb. of extra hay may
produced for each pound of nitro-
, while at the higher rate from
to 35 lb. of hay per pound of
rogen. A ton of extra hay pro-
ed may have a fertilizer cost of
m $25 under poor conditions to as
as $8 with the best. Several
rs accumulated carry-over effects
y be necessary to obtain the in-
ased yields and results."

**Protein content in bromegrass
s been increased from 9% in
fertilized to 12% in fertilized,
d crested wheatgrass from 7½%
12%, Mr. Weiser states. In-
ased percentage of protein as
ll as increased tonnage of for-
e should be considered in credit-
the full effects of fertilizer.**

Another benefit is with fall appli-
ons of nitrogen. Fertilized grass
ts quicker and grows faster in
the early spring, following the fertilizer application. For pasture use, this can be of considerable advantage.

★

Kansas wheat farmers have little to fear from the wheat streak mosaic virus this summer, predict Hurley Fellows and Webster Sill, Jr., plant pathologists at Kansas State College involved in research on wheat streak mosaic viruses. "From all indications there will be no widespread wheat streak mosaic outbreaks this summer," Fellows said. "There was a relatively small amount of volunteer wheat last summer, and surveys last fall revealed low populations of the wheat curl mites that transmit the virus. In addition, only two of the more than 100 samples sent in to the Kansas State College botany and plant pathology department for study were found to be badly diseased."

★

Two Wisconsin agronomists, A. M. Strommen and A. R. Albert, report that hay yields have averaged more than four tons per year for the past six years on fields top-dressed annually with 300 lb. fertilizer. Unfertilized fields have yielded less than three tons of hay. The tests were made at the Spooner Branch Experiment Station.

The extra hay from the fertilized fields the first year was sufficient to pay for the plant food the second year. These results have continued for each of the succeeding years. The agronomists say enough nutrients remain in the soil for an extra two or three tons of hay with no added investment.

NAMED VICE PRESIDENT

NEW YORK — Fraser M. Moffat, Jr., former director of the dyes and chemical export department of American Cyanamid Co., has been elected a vice president of the American Gulf Sulphur Co.

Here's another way
LION IS HELPING YOU
sell more Nitrogen Fertilizer

Impressive, Big-Space Advertisements are Appearing Month-After-Month in all These Publications

Lion's Chemical Sales Division is working to make sure you sell more fertilizers. One way we help is by *consistent advertising* to farmers. This advertising emphasizes how plant foods can best serve the farmer by increasing his profits.

As for *quality*, you can build your own reputation on a solid basis when you depend on Lion, a leader in the field of petro-chemicals. You can depend on Lion for *uniform high quality* . . . always.

With two giant chemical plants producing around-the-clock, throughout the year, Lion, with its versatile and flexible manufacturing processes, is a dependable source of the most popular and economical types of nitrogen fertilizer materials.

It will pay you to feature and sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. They sell easily, make consistent profits for you.

Look To LION—A Leader in Petro-Chemicals—For Nitrogen Fertilizers

Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer • Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions • Lion Sulphate of Ammonia

DISTRICT SALES OFFICES:
NATIONAL BANK OF COMMERCE BUILDING, NEW ORLEANS, LOUISIANA
SHEPHERD BUILDING, MONTGOMERY, ALABAMA

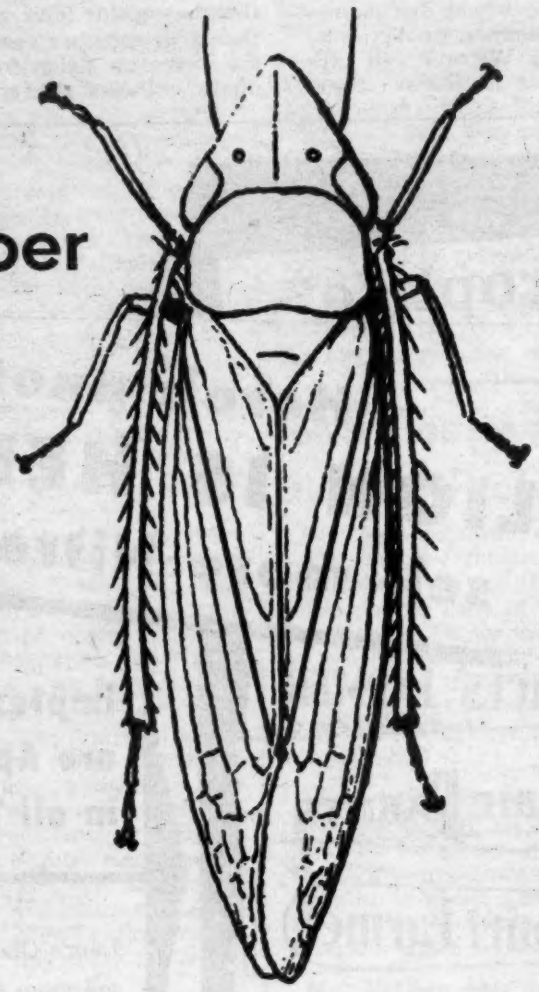
WORLD'S LARGEST MANUFACTURER OF PRILLED AMMONIUM NITRATE

LION OIL COMPANY
CHEMICAL SALES DIVISION
EL DORADO, ARKANSAS

BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Leafhopper



How to Identify

Adult leafhoppers are rarely a half-inch in length, and often are a quarter-inch or smaller. As indicated by their name, they are good jumpers and leap from leaf to leaf and plant to plant. Although the adults possess wings, they use their legs most extensively. Color of these bugs is from brown to pale green. Their distribution is throughout the world.

Habits of Leafhoppers

Eggs are laid in the leaf tissue or stalks of plants and two or more broods may occur annually. As to winter hibernation, different species spend the cold months in various stages. Some over-winter in the egg stage within the stems of plants while some species hide away in sheltered places in field crops. Still others spend the winter as nymphs. In warmer climates, the female leafhoppers may continue to reproduce throughout the cooler months, enabling the winged form to move northward in the spring of the year.

Damage Done by Leafhoppers

Even in the nymphal stage, these insects do damage. By sucking the sap from plants and injecting a poisonous substance into the plant tissue, leafhopper nymphs damage the area surrounding the feeding puncture. Although these bugs attack nearly all plant life, they commonly do damage to asters, calendula, dahlia, gladiolus, hollyhock, marigold, roses and zinnias. Clover, alfalfa, small grains and grasses as well as orchards are also on the insect's list of vulnerable crops.

Control of Leafhoppers

Among various materials suggested for leafhopper control by the U.S. Department of Agriculture and other sources, are chlordane, methoxychlor, DDT, parathion, pyrethrum, nicotine sulfate and copper-containing compounds. Wettable formulations of methoxychlor at 1 lb. an acre or parathion at 0.5 lb. an acre is recommended for control of the pest on alfalfa, as is DDT at the rate of 2 lb. an acre, except when the alfalfa is intended for forage.

Illustration of leafhopper furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

ACCEPTANCE OF FERTILIZER

(Continued from page 9)

medium high social and economic osition and reads an average num- er of papers and newspapers.

4. The Majority—The farmers con- ituting the majority of individuals ho adopt the idea are usually char- cterized as being older and having ss education. They read fewer mag- zines, bulletins, and newspapers and articipate less in agency programs.

5. The Nonadopters — The non- dopters as a group are differen- iated from the majority of the dopters by being somewhat older, ith less education, having rela- vely less social and economic tatus, and participating less in farm rganizations and agency groups. hese farmers also read fewer papers nd magazines.

When farmers who are informal eaders in a community accept the se of a practice (fertilizer use), hey set the stage for rapid mass doption. The innovator and the arly adopter are seldom mentioned y farmers as a causative influence n practice adoption.

The general framework described rovides a basis for organizing an ducational (or sales) program to ring about a practice change. It lso outlines an analytical frame- ork for study of the factors in- olved in change of practice—non- se of fertilizer to the regular and ncreasing use of fertilizer by farm- rs.

General Characteristics of Fertilizer Users and Nonusers

Approximately 69% of the farmers n Iowa used fertilizer in 1952-1953 see table 1). Among fertilizer users, 4% were tenants, 56 owners; among mong nonusers 44 were tenants, 56 ere owners. A fertilizer user could e characterized generally as having ore capital and a larger farm, aving had the benefit of more years f education, being somewhat young- r, and having had fewer years of rming experience than the nonuser.

Table 1. General Characteristics of Fertilizer Users and Nonusers in Iowa, 1952-53

Characteristics	Number of per cent Users	Non-users	All farmers
Number in sample.	365	167	532
Average size farm (acres)	204	165	192
Per cent owners or part-owners	56	56	56
Per cent renters ..	44	44	44
Average owned capital ($)* 31,751		19,807	28,002
Average age of operator	43	49	45
Average years farm-experience	18	22	19
Education			
Per cent grade school only	48	64	53
Per cent some high school	45	34	42
Per cent some college	7	3	6
Per cent believed Fertilizer Has			
Beneficial effect ..	87	63	80
Harmful effect ...	4	10	6
Effect not known .	8	27	14

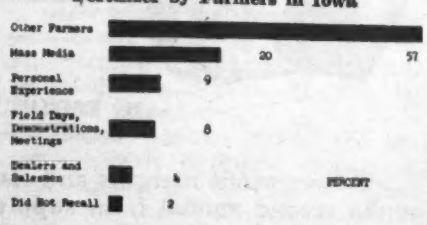
*Owned capital is the cash value of the farm (if owned), livestock, feed supplies, machinery and equipment minus any mortgage or indebtedness.

Although about 63% of the nonusers believe that fertilizer had a beneficial effect for crop production, the remainder either thought fertilizer had a harmful effect (10%) or did not know what effect fertilizer would have on crop production (27%).

Factors Influencing Fertilizer Use

All fertilizer users were asked the question, "What one thing more than anything else caused you to start using fertilizer?" The replies are summarized in figure 1.

Figure 1. Most Important Source of Information Influencing the Initial Use of Fertilizer by Farmers in Iowa



Over one-half of the farmers now using fertilizer credit neighbors, friends, landlords, or other farmers as the most important causative factor in adopting the use of fertilizer. This does not preclude the possibility that they had information from other sources, but it does reflect the important contact or medium which they recalled in arriving at their decision.

Mass media are generally recognized as a very important source of information on new fertilizers. In this study, one-fifth of the farmers using fertilizer indicated that they were motivated to use fertilizer by this means. Of the 20% crediting mass media, four-fifths claimed farm magazines, farm journals, and daily papers as the most important sources influencing their use of fertilizer. One-fifth indicated the most important source was bulletins and other published material from Iowa State College.

About 8% of the farmers adopted fertilizer use after attending fertilizer field days, fertilizer-yield demonstrations, or general fertilizer information meetings. A slightly larger group indicated that firsthand experience on their home farm obtained before they started farming themselves was the prime motivating factor in adopting the use of fertilizer. Four percent of the users gave the fertilizer dealer and salesmen credit for getting them to use fertilizer.

Relationship of Status To Influencing Factors

Certain notions can be drawn from a general grouping of all fertilizer users; however, only through an examination of the status of these fertilizer users can one begin to understand the forces which influence the acceptance of this particular practice. Among these factors are education, fertilizer experience, years of farming experience, tenure, size of farm and capital position.

Educational Experience

Other farmers were the most important original source of information on fertilizer use for those having grade school education only (62 percent). Farmers having a high school and some college education also credited this source as most important (52% and 44%, respectively). Those having some college education credited the acceptance of fertilizer use to a greater extent to articles in farm magazines, newspapers, bulletins, and materials from Iowa State College (46 percent). Fertilizer salesmen or dealers were a more important source of information among those with a grade school education (6%).

Years of Fertilizer Experience

Thirty-four percent of the fertilizer users have had fertilizer use experience extending to and beyond an eight-year period. Another third have adopted the practice in the past three years. Those who started using fertilizer in the last three years (most recent acceptors) credited other farmers who told about higher yields as the most important single factor in the acceptance of fertilizer use (36%). In general, the influence of neighboring farmers on the acceptance of fertilizer use was the most important factor regardless of length of fertilizer experience. Twelve percent of the farmers with three or less years of fertilizer experience credited magazines, newspapers, and farm journals as the primary source in fertilizer acceptance, whereas slightly over twenty percent of those with greater fertilizer experience credited mass media.

Years of Farming Experience

The experiences are divided into three main groups: those with nine years or less of farming experience, a group who began farming following World War II; another group with ten to nineteen years experience who had farmed largely through a period of generally rising prices; and a third group who had farmed for twenty years or more. This third group had had farming experience during an economic depression. In the latter group approximately one half had had thirty years or more farming experience.

As might be expected, those who had farmed for a period of less than ten years were influenced to a greater degree by their home farm experience (11%) than those who had farmed for a longer period (7%). Fertilizer salesmen or dealers had a greater influence among the farmers with more experience (8%).

Tenure

Other farmers were a more important source of information among renters than among owner-operators (65 vs. 51%). Owner-operators credited farm magazines, field days and demonstrations, extension meetings, and bulletins as a more important source than did renters (22 vs. 15%).

Size of Farm

The farmer owning the larger farms appeared to be less dependent on other farmers and credited his reading papers, bulletins, and attending meetings as a relatively more important causative factor influencing his acceptance of the fertilizer practice. Those who farmed the smaller units credited the fertilizer dealer and salesman as a relatively more important source. Other farmers likewise were an important influence to those operating the smaller sized farms.

Capital Position

Fertilizer users who owned capital above $30,000 gave relatively less credit to other farmers as a reason for starting to use fertilizer than those farmers with less than $30,000 owned capital. Of interest is the indication that farmers under $10,000 owned capital were more likely to credit what other farmers told them about fertilizer use than their own observation. All other capital groups credited what they had seen on other farms as the most important motivating force in adopting the use of fertilizer. The highest capital group is the only one that credited radio and television as a reason for starting to use fertilizer. This group also credited meetings by county extension personnel much higher than other capital groups. However, excepting those in the lowest capital group, they credited the fertilizer salesman or dealer less than other groups. Field days and demonstrations were relatively more important to farmers in the two lowest capital groups.

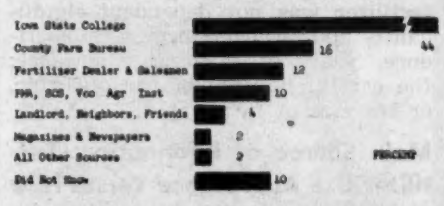
The preceding discussion indicates the importance of farmers seeing or hearing of tangible results (increased yields resulting from fertilizer use) from other farmers in influencing their acceptance of fertilizers. This important relationship between "other farmers" and "fertilizer acceptance" focuses attention on the importance of conveniently located farm demonstrations of fertilizers and fertilizer practices, if these fertilizers are to be used efficiently by increasing numbers of farmers.

Source of Information On a New Fertilizer

One of the purposes of this study was to identify the sources of information Iowa fertilizer users would depend on when a new fertilizer is placed on the market. Although the question involved a new fertilizer product, it was recognized that all respondents had had some experience in fertilizer use—an associated practice.

The question asked farmers was as follows: "If you heard of a new fertilizer that has relatively low cost and is very effective in increasing crop yields, where would you seek information about its use?" Ninety per cent of the 364 fertilizer users identified one or more sources of information they would select (Fig. 2).

Figure 2. Relative Importance of Main Source of Information Fertilizer Users Would Seek on a New Fertilizer



Forty-four percent of fertilizer users indicated that Iowa State College was their main source of information. Grouped in this category in the order of frequency named were replies such as the county agent, Iowa State College, county extension service, and experiment station.

The Farm Bureau was designated by nearly 16% of the fertilizer users as their first choice as a source of information on a new fertilizer. Inasmuch as the County Farm Bureau at the time of the survey was the legal sponsoring organization of the Extension Service in Iowa, this source might appropriately be added with the Iowa State College source. This would indicate that a total of 60% of the fertilizer users would look to the organizations or the representatives of Iowa State College as their source of information on new fertilizers.

Fertilizer dealers and salesmen were selected by 12% of the users as their main source of information on new fertilizers. The Production and Marketing Administration, Soil Conservation Service, and vocational agriculture instructors in total accounted for slightly less than the fertilizer dealers and salesmen. While over 50% of these same farmers credited their landlord, neighbors, and friends as a causative factor in starting to use fertilizer, only 4% said they would go to the same group for information on a new fertilizer just about to be placed on the market.

Magazines and newspapers were considerably less important as a source of additional information under these conditions. Undoubtedly, as indicated previously, mass media's biggest role would have been played in the announcement phases of this new practice.

Educational Status

The informational source selected is associated with the educational experience of the farmer. Two thirds of the farmers who had completed high school and over four fifths of the farmers with some college training indicated Iowa State College or the County Farm Bureau as their main source of information on a new fertilizer. These two groups also identified magazines and newspapers more

frequently than those with lesser educational experience.

Those farmers with grade school education and some high school would seek information at the Production and Marketing Administration, Soil Conservation Service, or vocational agriculture teachers more often than those with a higher level of formal educational experience.

Tenure

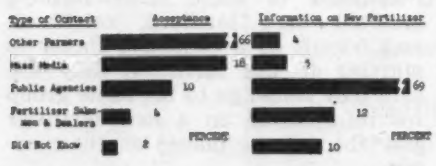
Renters credited Iowa State College as a source of information more frequently than did owners and part-owners. At the same time, owners identified the County Farm Bureau as a source of information to a greater degree than renters. Considering Iowa State College and the County Farm Bureau together, 56% of owners identified this group, whereas 65% of the renters mentioned credited this source. Farm tenants indicated the Production & Marketing Administration Office more often as the main source, while owner-operators more frequently indicated magazines and newspapers as a selected source.

The source of information Iowa fertilizer users would select on a new fertilizer was not dependent significantly upon the fertilizer use experience, years of farming experience, the capital position of the operator, or the size of farm.

Main Source of Information: Fertilizer Use Acceptance Versus New Fertilizers

Figure 3 illustrates the differences between informational sources as primary motivating factors in acceptance of fertilizer use versus securing knowledge about a new fertilizer product. Observations of the better stands on other farms and hearing about higher yields resulting from fertilizer use were more important to the masses of farmers in acceptance of fertilizer as an important factor of production than when information was needed on new fertilizer products. When farmers who have used fertilizer desire information about a new fertilizer product, they secure their information primarily from public agencies (Iowa State College, 44; County Farm Bureau, 16; U.S.D.A. agencies, 9%, respectively). Mass media (radio, magazines, television, and newspapers) played an important role (18%) in spreading the acceptance of fertilizer use. However, there was a decrease in the relative importance of mass media in conveying basic information on a new fertilizer product (Fig. 3).

Figure 3. Comparison of Sources Responsible for Trial Use of Fertilizer and Sources Used to Secure Information On a New Fertilizer



The importance of fertilizer dealers and salesmen increased when farmers sought information on new fertilizer products. Only four percent of the farmers using fertilizer credited fertilizer dealers and salesmen as the primary source of information leading to the acceptance of fertilizer use. However, twelve percent of the farmers indicated that they would seek information from fertilizer dealers and salesmen when they heard of new fertilizer products about to be placed on the market.

The results of this study indicate the strategic and increasing importance of fertilizer dealers and salesmen as sources of technical information during this era of rapid technological changes in the fertilizer industry. An important result of this trend is that a greater burden is placed on handlers of fertilizer to have available for farmer distribution the most recent technical literature on fertilizers and to be able to understand and answer questions raised by farmers.

This apparent reversal of source preference may be explained by the stage of knowledge of the farmer with respect to fertilizer use. When he was undecided whether to try fertilizer or not, he accepted the word of his friend or neighbor to confirm his preliminary opinions. His neighbors or friends were in fact the "push" he needed to try the practice. They were "acceptors" and thus had an influence on his decision.

When faced with a question about the use of a new kind of fertilizer, he perhaps would reason that his neighbor would likewise be looking for such information. Thus, he was inclined to mention other primary sources of information on new fertilizers. Sixty-nine percent of the fertilizer users indicated public agencies, particularly the representatives of the state agricultural college (44%).

Contributions of Industry to Texas Farming Outlined

AUSTIN, TEXAS—Farm chemicals are playing an ever-increasing part in boosting crop production in Texas, according to a recent report from the Bureau of Business Research at the University of Texas.

It states that many old-time dirt farmers are both amazed and skeptical at the new generation of agricultural specialists which is feeding and treating their crops with a variety of chemical products to reap record-breaking harvests.

Since the 1930's the cotton farmers of Texas have increased the average yield per acre by 60%. Cattle raisers are producing 30% more beef and veal than in the 1920's from the same size herd; and rice growers now get 10% more production than they did a score of years ago.

With the increasing use of chemicals in Texas agriculture, several large companies have increased their manufacturing facilities in the state during the last two years, and have increased sales of all types of agricultural chemicals. But despite this increase in usage, the Bureau of Business Research states that more chemical factories are needed in Texas.

The Bureau of Business Research also observes that farmers and ranchers have profited greatly by the increasing use of agricultural chemicals, but they are still losing money by not using more of them and applying them in the right way. In some parts of the state, the Bureau stated, there is still some reluctance to buy various fertilizers, insecticides and herbicides.

Two reasons were listed for this hesitancy:

1. The uncertainty about the proper use of chemicals causes some farmers not to buy. They read the label or someone tells them about a new chemical, but they wait for someone else to try it first.

2. Many farmers still regard new farm chemicals with suspicion, and are afraid to use them. Isolated cases of injuries to people or damage to crops through misuse have been widely circulated, causing many farmers to look upon a new chemical as something too dangerous to use safely.

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Lower profit margins and rising costs of operations were named at the second annual farm supply store and elevator managers' conference held June 7-9 at Iowa State College, Ames, as the two merchandising items that bear the closest watch.

Fertilizer and other farm chemical dealers comprised a large percentage of the 200 persons who registered for this relatively new but already popular short course. They heard speakers talk optimistically of the long-term farm supply dealer outlook but warned that the next four or five years may be the critical ones.

Risky Credit

H. E. Howell, farm economist at Iowa State College, warned that the short-term situation—the next four or five years—is likely to be a time when retail credit given to farmers may be more risky than it has been since 1939.

"You probably have to decide," he said, "how much time you can afford to give to credit investigation and how much business you may lose by not extending credit. We're probably going to be faced by agricultural surpluses and it will not be as easy to succeed in credit business as it has been since 1939."

Mr. Howell suggested that elevator and farm supply managers keep always in mind the three "C's" of credit: Character—the willingness to pay as agreed; capacity—the ability to pay as agreed, and capital—the "worth" of the person getting the credit. He warned that, in measuring capacity to pay, the retailer should bear in mind that at the present time the midwest farmer showing a gross profit of less than $10,000 a year is not making a good living. Some, he warned, are living on depreciation of their investment.

"If you can't operate your retail credit within the framework of the three 'C's' you'd better turn it over to someone who is set up to administer and collect credit," he advised.

Volume, Margin and Expenses

L. J. Norton, head of the department of agricultural economics at the University of Illinois, referred to three main factors in the retail dealer outlook: Volume, margin and expenses. On margins, the competition, he predicted, is going to be vigorous. "If it gets too rough," he said, "there are going to be some failures in the business."

Regarding expenses, he said, "I expect that at least 25% of the businesses represented here could well take a hard look at their expenses and do some pruning. This is the general case in a period such as we have been in. This is a tough job, but it often has to be done in any line of business. One of these cost items is bad debt losses."

Personnel and Training

George Beal, Iowa State College rural sociologist, and Clyde Harden, assistant manager of personnel development and training, Quaker Oats Co., discussed supervision and training of employees.

Mr. Harden said, "An employee-centered supervisor will get better production than a production-centered supervisor." He advised managers to be "close" to the people who work under them. In training he advised not only lecture methods—telling the employee how — but participation methods—involving the employee in decisions about his own job.

Mr. Beal said industrial studies have repeatedly shown that the worker who is most satisfied is the one who understands what the organization is trying to accomplish and how his own work helps to accomplish this objective.

He said that to get the best-efforts of an employee, a democratic atmosphere is needed. He warned this is not to be confused with a "laissez faire" system. It means communication between the manager and employees, participation by the employees in plans and decisions within the field of their own jobs, not everybody doing "as he pleases."

Morse on Fertilizer

"There is no substitute for a good job of farming—and able management. That needs to be stressed in 1955—and in the years ahead. Farmers will continue to be largely the masters of their own financial structure."

True D. Morse, under secretary of agriculture and president, Commodity Credit Corp., thus addressed Farm and Home Week delegates at the University of Kentucky. Dealers will be interested in some other comments of Mr. Morse, especially those about the use of fertilizer. He continued:

"Efficiency on farms is becoming mandatory. The average capital investment for each farm worker is four times as high as in 1940—about $20,000. That is double the investment per worker in many industries.

"Mistakes in management can be very costly—and cut rapidly into reserves. The reverse is also true—good management and efficient farming can pay high returns.

"Farmers are feeding crops and pastures more plant foods—because it pays. Fertilizer use on a nutrient basis was up 4% last year. Some farmers may be tempted to economize by using less. It will be a mistake.

"Irrigation needs to be expanded in the humid areas and will help avoid low yields and drouth disaster such as has been suffered again this year. The 83rd Congress provided loans for wells, water storage and irrigation systems."

SOILS MAN RETIRES

ST. PAUL—Paul R. McMiller, University of Minnesota soils professor, will retire on June 30. In addition to 44 years of teaching soil subjects and research on soils problems, Prof. McMiller has headed the vast amount of field work involved in surveying and classifying the soils in Minnesota's 87 counties. About half the counties have now been surveyed and soil maps drawn of them.

William Allen

CHEMICAL DIRECTOR — William (Bill) Allen has been appointed chemical director of the Agricultural Chemicals Division of the American Chemical Paint Co., Ambler, Pa. J. M. F. Leaper has been named senior scientist in the division.

INSECT NOTES

(Continued from page 5)

that miticides are now needed if leaf injury is to be prevented.

Plum curculio activity is extremely light. This insect is between broods. No curculio were taken in a commercial peach orchard, with a crop, where five trees were bumped on June 20, and only six adults were taken in an abandoned orchard, with no crop, that previously has been heavily infested.

A few stink bugs can be found in peach orchards. Three were bumped from 10 trees on June 20. Heavy infestations of an unidentified mite combined with aphid injury to cause severe defoliation of soft maples in certain yards around Vincennes, Ind.—D. W. Hamilton.

Hay, Tobacco Insects in Maryland

COLLEGE PARK, MD. — Potato leafhoppers are showing up in many parts of the state. A survey of fields in Carroll, Howard, Prince George's and Talbot Counties showed 1 to 20 leafhoppers per 10 sweeps. The insects probably will increase from now on. Lesser clover leaf weevil injury has occurred to new growth of clover in Kent and Queen Anne's Counties from the feeding of small green weevils.

Small grasshopper nymphs have become very numerous in some hay fields. Hornworms have started to feed on tobacco in southern Maryland. Budworms have also been reported.

Mexican bean beetles are doing heavy damage to snap beans in Carroll County. Bean beetles seem to be more abundant this year than last. Pale-striped flea beetles were found infesting snap and lima beans in Carroll County. Large numbers of cabbage butterflies have been noticed in central Maryland and the Eastern Shore.—Theo. L. Bissell and Wallace C. Harding.

Wireworms, Hoppers In West Texas

EL PASO, TEXAS—Sporadic insect infestations are reported in several parts of West Texas. Wireworms are doing damage in widely scattered areas. Grasshoppers are being found in several counties, but are not yet in alarming numbers. In the El Paso Valley, cotton aphids and thrips are causing some trouble.

Mid-South Cotton, Soybean Crops Need Hot, Dry Weather

MEMPHIS—Hot, dry weather is needed to bring out Mid-South crops of cotton and soybeans, extension officials of Arkansas, Mississippi, Missouri and Tennessee reported last week.

There was some hot, dry weather in parts of the Mid-South during the period, but the major portion of the Mid-South had wet, cool days, which retarded the growth of the hot weather crops.

Warmer weather during the past week greatly improved crop conditions generally throughout Mississippi, Extension Service specialists said.

"Cotton responded to the higher temperatures and is making rapid growth," said T. M. Waller, Extension cotton specialist. "Sufficient moisture is now in the soil for normal growth of the cotton plant. Farmers are side dressing late plant cotton and are cultivating as needed."

Pastures have made a great comeback from last summer's overgrazing and drouth damage. They now are furnishing plenty of grazing.

Arkansas farmers need warm, sunny weather in the next few weeks to overcome a slowed-down growth in cotton, which an unusually cool spring has brought about.

The Agricultural Extension Service said this year's crop is not as far advanced in many areas as was last year's crop at mid-June. Plant diseases and insects are beginning to give trouble in some areas.

Wet weather in Northeast Arkansas counties had delayed planting of some rice acreage, but in southern and east central counties, the rice crop is up and doing well, said the Extension Service. Soybeans also were reported making good growth in most areas.

Corn prospects are particularly bright, with this year's crop expected to be better than in several years.

In West Tennessee, Judd Brooks, district agent, at Jackson reported the area is still in need of some hot, dry weather to allow farmers to work lowlands and bottoms and to weed out the cotton and corn.

"The weather has been excellent for small grains, pastures, sweet potatoes and tobacco," Mr. Brooks said. "But cotton is in poor stands in most sections and corn is suffering from the wet, cool days and nights. There has been some loss of hay due to flooding and the crimson clover has been damaged."

In Southeast Missouri, James T. Rollins, assistant county agent, said grasshoppers are giving the farmers trouble, but they have the insects under control.

"The recent cold spell retarded growth of both cotton and beans, the two major crops in the area, but no appreciable damage was reported. All we need is some good hot weather, and it seems we're going to get that now," said W. F. James, Pemiscot, Mo., county agent.

St. Regis Consolidates Chicago Sales Offices

CHICAGO — St. Regis Paper Co. announces that the Chicago sales offices of its various divisions have been consolidated, together with the Chicago traffic department, at a new location.

The new offices are located at 18 South Michigan Ave., Chicago 3. The telephone number is FRanklin 2-5671.

Divisions located there include kraft; multiwall packaging; panelyte; printing and publication.

FARMLAND VALUES UP

COLLEGE STATION, TEXAS—Farm real estate values in Texas rose 3% between November and March and 2% during the 12 months ending March 1, according to U.S. Department of Agriculture.

Firm Acquires Rights For Hy-Gro Plant Food, Red Arrow Insecticides

BALTIMORE—All manufacturing and product name rights for Hy-Gro Soluble Plant Food and Red Arrow insecticides have been purchased from McCormick & Co. by a newly formed company, Hy-Gro Corp., David H. Fulton, Jr., vice president of Plantabbs Corp., announced recently.

Mr. Fulton will serve as president of the new corporation, which will manufacture and market the former McCormick products.

Other Hy-Gro officers are Edward A. Hartman, vice president; F. Jackson Andrews, vice president and chairman of the board; Gordon C. Murray, secretary; and W. James Price 4th, treasurer.

Red Arrow insecticides have been marketed by McCormick & Co. for about 40 years, while Hy-Gro Soluble Plant Food was added to the line about 10 years ago.

CURRENT SALES

(Continued from page 1)

east area of the U.S. appear to be up moderately and that tonnage in the Far West, led by Pacific Coast States, showed an increase.

Tonnage appears to be off in the South, although that area has made a comeback from the earlier unfavorable situation. Texas tonnage is up, while Alabama and Florida seemed to be in better shape than the rest of the Southeast, NPFI said.

The Midwest sales also lagged, with Missouri and Nebraska hard hit.

NPFI noted that there was unusually wide variation, even within local areas, in reports received in its survey.

STORED GRAIN LOSS

LAFAYETTE, IND.—Weevils and other insect pests rob Hoosier farmers of nearly three million dollars in stored grain each year.

The best answer...

TO YOUR NITROGEN NEEDS...

VITREA
(VY-TREE-UH)

45% NITROGEN from UREA

There's no substitute for *quality* in fertilizer . . . for quality means satisfied customers.

And that's just what new Vitrea offers . . . more satisfied customers . . . with high quality nitrogen and more "down-to-earth" advantages for the farmer.

- 45% nitrogen . . . saves time, labor and storage space
- Resistant to leaching
- Quick acting — long lasting
- Ideal for all crops
- Non-caking, free flowing
- Readily soluble
- Can be applied by any common method . . . at the farmers own convenience

Write for free supply of VITREA folders today

For high quality and dependable service fill your nitrogen needs with VITREA.

JOHN DEERE QUALITY CHEMICALS

Grand River Chemical Division of
DEERE & COMPANY
GENERAL & SALES OFFICES—TULSA, OKLA. • PLANT—PRYOR, OKLA.

J. B. Beaird Co. Appoints Three New Representatives

SHREVEPORT—The J. B. Beaird Co., Inc., of Shreveport has appointed three new field representatives in its LP-Gas and anhydrous ammonia equipment sales division to cover Texas, Missouri and the Pacific Northwest, J. L. Tullis, vice president and general manager of sales, has announced.

Chapman Rice, veteran in the butane distribution field in Texas, has been assigned to represent Beaird in that state. Mr. Rice formerly operated the Border Butane Corp. in Weslaco and was sales manager of a large LP-Gas retail organization in Georgia. He had previously served with Liquefied Gas Co., Inc., at Aransas Pass and Weslaco. He has established headquarters at his home in Luling.

John Stacey, who has been with Hydro Gas Co. of Springfield, Mo., has been named to handle sales of Beaird's LP-Gas and anhydrous ammonia equipment in Missouri. Born and raised in Springfield, Mr. Stacey will continue to base his operations in that city.

R. N. (Dick) Fletcher is the new representative for Idaho, Washington and Oregon for the Beaird West Coast Co. in Stockton, Cal. Mr. Fletcher formerly was manager of KNU-Gas in Mountain Home, Idaho. He will continue to work out of Mountain Home.

Growers Producing Seed From Hybrid Sorghums

PLAINVIEW, TEXAS — The new hybrid grain sorghums have now been placed in the hands of a few experienced growers who are growing seed for commercial use. This seed will be distributed next year, and scientists at the Lubbock Field Station think there might be enough seed by 1956 to plant a half million acres.

In station tests the new sorghums have outproduced regular sorghums by as much as 20 to 40%. At present the hybrids have one white and one red parent. The first generation plants will have red seed, but in the second generation three-fourths of the seed will produce red seed and one-fourth white, with both colors being represented on each head of sorghum.

HONORARY DEGREE

NEW YORK—At the commencement exercises of the University of Massachusetts, held at Amherst, Mass., June 5, Charles M. Powell, class of 1927, president of The American Agricultural Chemical Co., New York, received the honorary degree of doctor of laws, for service in the interest of conservation.

Calspray Ships 700 Tons Of Cotton Sprays, Dusts To Central America

RICHMOND, CAL.—A single 700-ton shipment of insecticides for use on Central American cotton crops has just been sent to El Salvador and Nicaragua by the California Spray-Chemical Corporation of Richmond, Cal. This single shipment of Ortho products is one of the largest of its kind ever shipped to Central America and includes both dusts and sprays for application by airplane as well as ground applicators.

Plant officials say the shipment is caused by the growing cotton production in the two nations. Despite their fame as sugar and coffee growing areas, cotton acreage has been rising steadily since the war when the occupation of the Mediterranean area caused a shortage of cotton in this hemisphere. Today, cotton is one of the big money crops in these countries.

The use of agricultural chemicals in these countries has risen along with the increase in cotton acreage.

The present shipment was sent to El Salvador and Nicaragua aboard the SS Santa Cruz. The Ortho products included are: Ortho 4.5-7.5 Cotton Dust, Ortho 3-10-0 Cotton Dust, Ortho 3-15-0 Cotton Dust, Ortho Alltox DDT 20-10 Dust, Ortho Aldrin 2 Spray, Pest-B-Gon 2 Spray, Vapophos 2 Spray, Ortho Endrin 1.6 Spray and Ortho Dieldrin 1.5 Spray.

Consolidated Dividend

NEW YORK—The directors of Consolidated Chemical Industries, Inc. have declared regular quarterly dividend of 37½¢ per share on the class "A" participating preference stock and on the class "B" common stock. In addition, an extra dividend of 62½¢ per share on both classes of stock was declared. Dividends are to be paid Aug. 2, 1955 to stockholders of record July 15.

FIRST SHIPMENT — Officials of Grace Chemical Co. and the Perkins Glue Co. recently participated in a brief ceremony marking the first commercial shipment of urea from the Grace nitrogen plant in Memphis. Robert Dixon, West Memphis plant manager of the Perkins Glue Co., second from right above, accepts the shipment from William J. Haude, vice president and general manager of Grace Chemical Co., third from left. Other Grace people who took part in the ceremony were, left to right, Vincent L. Rebak, New York sales manager, Dr. Robert Q. Parks, general sales manager, and John G. Carriere, vice president and plant manager. The new $20,000,000 petrochemicals plant, formally dedicated Jan. 6, 1955, makes both anhydrous ammonia and urea. Production in the ammonia section got underway last December and presently exceeds the designed capacity of 250 tons a day. Urea production, according to Mr. Haude, is expected to reach its rated capacity of 150 tons a day in the near future. The chemical will be marketed nation-wide and exported, he said.

SAFETY RECORD—A safety record of 1,000,000 man-hours without a lost-time accident was recently achieved by the Chatham, Ont., fertilizer plant of Canadian Industries (1954) Limited. Here, Mary Nasterson of the plant office staff, and veteran of 30 years service, Charles Wellington, display the million-hour plaque presented the plant by the Industrial Accident Prevention Assn. The record represents eight accident-free years, believed to be one of the best among fertilizer plants in North America.

only two came home

Here's a quick check on HYPRO Sprayer Pumps that can mean greater customer satisfaction and higher profits for you. HYPRO'S Sprayer Pump line of 4 sizes is not only designed and priced to *sell* but also engineered and built to *stay sold*. Out of 3,000 sprayers with HYPRO pumps sold by one manufacturer last season, only 2 pumps were returned for servicing.

Big figures? Yes, but a tiny "return" percentage that adds up to "satisfied customers." That's because HYPRO Sprayer Pumps are built to *last*. To take that "over the fields" pounding and still operate perfectly with either wettable powder or emulsifiable spraying materials *all* with minimum maintenance attention. Now HYPRO offers 4 sprayer pump sizes; *your* answer to all of your customers' spraying pump requirements. Capacities from 5 to 65 gal. per min. Each pump is individually tested and must meet the rigid, quality standards that's made HYPRO the most respected name in farm sprayer pumps.

for details . . . write today to:

HYPRO ENGINEERING, INC.

706 39th Avenue N. E., Minneapolis 21, Minnesota

Illinois Open House To Feature Corn Plots

URBANA, ILL. — Visitors to the University of Illinois College of Agriculture open house June 30, will be able to see the Morrow Plots all in corn. This happens only once in every six years, explains H. L. Sharp, director of tours and short courses at the college. The Morrow Plots tell their story best when they are completely planted to corn.

These experimental plots are the nation's oldest, having been established in 1876, Mr. Sharp says. Long-time corn yields vary from 19 bu. an acre on the untreated continuous corn plots to an average of more than 100 bu. on the fertilized rotation plots.

In a new experiment this year, fertilizer has been added to some of the continuous corn plots that have never been fertilized before to see what the response will be. Mr. Sharp says the difference is noticeable already.

Personnel Manager Named

LOS ANGELES—A. J. Carrado, engineering administrative assistant at American Potash & Chemical Corp's. main plant at Trona, Cal., has been named by the company as personnel and office manager of American Lithium Chemicals, Inc., at San Antonio, Texas. American Potahs & Chemical Corp. owns 50.1% interest in American Lithium Chemicals, which was formed in late 1954.

American Potash Wins Safety Award

LOS ANGELES—American Potash & Chemical Corp., of Los Angeles received the Lammot du Pont Safety Plaque award recently at the annual meeting of the Manufacturing Chemists' Assn. at White Sulphur Springs, W. Va.

American Potash & Chemical Corp. was named winner among companies whose employees worked more than 2,000,000 man-hours annually. The award is made to chemical companies showing the greatest improvement in plant safety over a five-year period.

The present award is in addition to eight other awards received by American Potash & Chemical Corp. this year for safety records set by the company and its various divisions.

Stauffer Chemical Company, New York, was runner-up in the over 2,000,000 man-hours category. The chemical industry set a new all-time safety record in 1954 with lost-time accidents in the industry reduced to 3.27 per million man-hours worked, an improvement of 11% over 1953. Accident-severity rate declined to 0.49 per thousand man-hours worked, a reduction of 40% over 1953.

YIELDS DOUBLED

URBANA, ILL.—Corn yields have been doubled on University of Illinois experiment fields in southern Illinois by use of fertilizers.

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

The usage of commercial fertilizers n India is woefully low. Politicians nd industrialists, financiers and doooders realize that the answer to he problem of malnutrition in that ast country lies in the use of more cientific farming methods. India has population of nearly 360 million eople. To this another half million re added every year.

The recently formed Fertilizer Asociation of India is trying to arouse he interest of farmers in using more rogressive methods.

A. A. Rahimtula, managing director of the Hyderabad Chemical and Fertilizer Co., Ltd., Secunderabad, India, has been visiting in Europe and the U.S. telling the story of his country's problems. In Hamburg, Germany, he sought the support of the International Superphosphate Manufacturers' Assn., and he addressed that body's general council.

The total consumption of phoshates in India is currently running t 16,600 metric tons a year while itrogen usage is set at 80,600 tons nd potash at 5,600 tons. Compared ith requirements these figures are nadequate, Mr. Rahimtula declares.

Farmers are coming to appreciate he advantages of nitrogenous fertizers, but they are slow to accept hosphates and potash. The Indian ertilizer industry has launched a esearch program in collaboration ith French and German potash inerests to find out requirements.

The phosphate requirement has een set at one million tons a year. o fill the gap between present conumption and that figure is the probem. India has 15 superphosphate lants with installed capacity of 50,-00 tons a year but production is ay below this. The manufacturers, Mr. Rahimtula reveals, have set a arget of 120,000 tons a year by 1961 nd they are working towards achievng this figure.

nsecticide Need

India also needs insecticides, prinarily DDT. The state owned factory t Delhi, with a capacity of 700 tons, s to be expanded to a maximum of ,400 tons a year. Another factory is o be established at Alwaye, Travanore and this, too, will have a caacity of 1,400 tons a year.

Initially, India needs 8,000 tons DDT annually if the anti-malarial rogram is to be carried out in full, ith the demand dipping to 5,000 tons year as the project gets under way. ome privately owned factories are lso to produce benzine hexachloride ith a target production of 2,000 tons year.

Milk Sprays

The British are arguing about the fficacy of milk sprays for the eradiation of tomato mosaic. Experiments t the John Innes Institution have roven, so the research men say, hat milk can do a successful job. s a result, amateur and professional omato growers have become milk ddicts.

Speaking on the subject before the Royal Society of Arts, Manufactures and Commerce in London, F. C. Bawden, deputy director of the Rothamsted Experimental Station, declared "If you are asking what, on present evidence, I would advise a tomato grower to do with a pint of milk, I would say, drink it."

In reply to a John Innes official ho said that the plants were milk sprayed at Mr. Bawden's suggestion, Mr. Bawden said he thought there were potentialities that required testing. While there is experimental evidence that milk has a nutritive value for the grower, there is none that it controls tomato mosaic. He added "That there was less tomato mosaic at John Innes during the last two seasons than in previous years, may be because the plants were sprayed with milk, but it may equally have been from some other cause."

Snails

American farmers may think they have troubles from pests. A representative from Saipan, in the Pacific, recently appeared before the United Nations Trusteeship Council in New York to say that his country's chief problem was African snails. Snails, that is, as big as a coffee cup. They eat the vegetables in the native gardens.

The problem has been solved by the U.S. administrators on the island. They have imported other snails which are the natural enemies of African snails and now the problem is less severe. There is a move afoot to introduce the imported snails on other islands so that the "giants" can be eradicated completely.

Chilean Nitrate

As a result of the Chilean government's action in easing the conditions of working for nitrate manufactures, it is reported that the Anglo-Lautaro Nitrate Co. will spend between $14 million and $25 million modernizing its plant and equipment. The Tarpaca & Antofagasta Co. proposes to spend $11 million for similar purposes.

Earlier this year the government made an agreement with the nitrate producers, under which the basic law governing nitrate production in Chile should be changed, so that instead of 25% of the profits going to the government, it should take 40%, but that production costs would be based on free exchange rates, certain amortizations, and interest on loan charges.

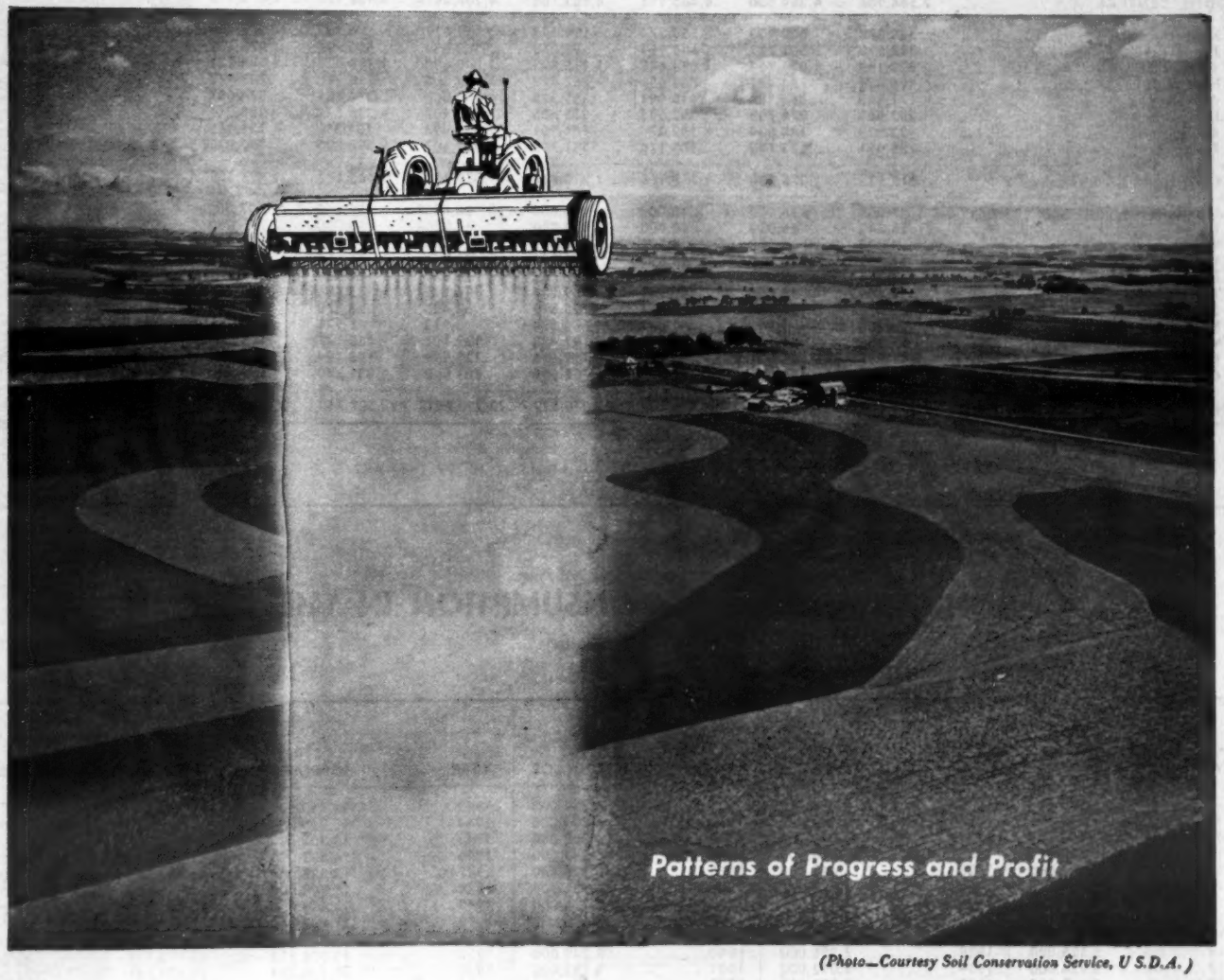
This compares with the basis which has been adopted hitherto under which producers have had to sell their sterling and dollar drafts to provide for the costs of production at an exchange rate far below that currently operative, which meant that the real contribution to the government often ran as high as 60% of the total take.

The new arrangement has still to receive congressional approval but unless the scheme goes through there will be no chance of bringing about that degree of modernization necessary for a revival of a successful Chilean nitrate industry, observers say.

Chile exports nitrate to more than 40 countries, with the U.S. taking 42%.

FIELD DAY HELD

HOPLAND, CAL.—A fast and inexpensive method of killing trees on rangelands was demonstrated recently by University of California scientists at the Hopland Field Day. Oliver A. Leonard, botanist on the Davis campus of the University, explained the cut-surface method using 2,4-D and 2,4,5-T, which kills trees in a few months. The day-long program at the range research station in Mendocino County also included discussion of range weed control, reseeding and fertilization of rangeland and browse feeding value.



(Photo—Courtesy Soil Conservation Service, U.S.D.A.)

High Grade Muriate of Potash

by DUVAL

Duval Muriate of Potash ranks high as one of the essential nutrients which greatly increase yield and profits in crop production.

DUVAL SULPHUR and POTASH CO.
Modern Plant and Refinery at Carlsbad, New Mexico

Address all communications to:
ASHCRAFT-WILKINSON CO.
Exclusive Distributors
ATLANTA, GEORGIA
Cable Address: Ashcraft

NORFOLK, VA. • CHARLESTON, S. C. • TAMPA, FLA. • JACKSON, MISS. • COLUMBUS, OHIO • DES MOINES, IOWA

FERTILIZER CONSUMPTION IN THE U.S.

(Short Tons)

STATE	TOTAL CONSUMPTION 1944	1950	1951	1952	1953	1954 TOTAL CONSUMPTION	1954 COMMERCIAL SALES	1954 TVA TEST & DEM. PROGRAM
NEW ENGLAND	459,689	474,486	459,007	474,788	469,153	423,408	423,408	0
Maine	220,873	200,069	172,219	216,917	211,287	178,751	178,751[1]	0
New Hampshire	21,272	27,879	23,280	16,589	20,291	16,274	16,274	0
Vermont	38,218	50,722	66,164	46,186	50,582	40,368	40,368[1]	0
Massachusetts	89,628	88,334	86,620	95,448	85,454	85,917	85,917	0
Rhode Island	15,333	16,402	17,419	16,309	14,299	14,132	14,132	0
Connecticut	74,365	91,080	93,305	83,339	87,240	87,966	87,966	0
MIDDLE ATLANTIC	1,205,969	1,445,203	1,486,299	1,514,182	1,497,597	1,440,297	1,440,297	0
New York	478,669	609,500	625,000	631,250	640,000	588,800	588,800	0
New Jersey	239,687	249,347	246,710	270,505	252,904	265,550	265,550	0
Pennsylvania	487,613	586,356	614,589	612,427	604,693	585,947	585,947	0
EAST NORTH CENTRAL	1,769,693	3,212,358	3,388,970	3,914,399	4,140,033	4,065,380	4,064,402	978
Ohio	590,672	924,727	930,463	1,113,968	1,107,895	1,008,400	1,008,292	108
Indiana	478,814	921,680	891,635	1,049,415	1,106,722	1,161,909	1,161,599	310
Illinois	195,670	474,234	646,668	792,162	919,638	897,322	896,821	501
Michigan	287,858	506,743	540,901	601,205	598,532	575,481	575,481	0
Wisconsin	216,679	384,974	379,303	357,649	407,246	422,268	422,209	59
WEST NORTH CENTRAL	404,357	1,117,843	1,330,295	1,570,818	1,821,747R	2,070,373	2,069,880	493
Minnesota	77,516	217,133	200,936	212,701	279,229	313,238	313,238	0
Iowa	94,696	314,037	396,263	402,613	579,327	609,868	609,804	64
Missouri	179,716	365,672	465,319	570,886	562,928	649,750	649,627	123
North Dakota	3,050	20,173	20,880	34,128	41,158R	48,643	48,643	0
South Dakota	300	6,135	7,651	11,201	19,908	31,381	31,229	152
Nebraska	2,500	47,067	77,595	100,848	144,521	191,452	191,404	48
Kansas	46,579	147,626	161,651	238,441	194,676	226,041	225,935	106
SOUTH ATLANTIC	5,014,541	6,354,362	6,438,237	6,838,414	6,709,887R	6,593,424	6,589,492	3,932
Delaware	45,290	58,845	69,797	81,259	85,000	89,250	89,250	0
Maryland	216,425	252,644	272,292	286,687	295,104	309,639	309,639	0
District of Columbia	1,500	2,000	2,000	2,400	2,500	2,700	2,700	0
Virginia	563,122	767,932	807,359	845,721	799,548R	776,786	776,178	608*
West Virginia	59,428	104,467	103,027	96,334	84,168	73,816	73,816	0
North Carolina	1,406,828	1,818,921	1,766,479	1,872,685	1,820,622	1,824,352	1,822,947	1,405*
South Carolina	810,934	1,014,253	938,936	971,565	956,251	886,654	886,047	607
Georgia	1,080,812	1,237,932	1,273,136	1,393,985	1,386,162	1,372,284	1,370,972	1,312*
Florida	830,202	1,097,368	1,205,211	1,287,778	1,280,532	1,257,943	1,257,943	0
SOUTH CENTRAL	2,584,906	4,304,500	4,465,111	4,483,104	4,207,001R	4,486,157	4,473,915	12,242
Kentucky	308,688	620,938	559,274	599,643	549,692R	574,197	572,420	1,777*
Tennessee	342,590	502,722	608,969	595,078	563,334	580,206	573,139	7,067*
Alabama	823,189	1,054,754	1,094,648	1,115,893	1,040,500	1,196,628	1,194,231	2,397*
Mississippi	456,051	764,437	764,051	707,473	654,805	710,298	709,472	826*
Arkansas	171,848	366,184	415,091	365,528	398,063	374,601	374,601	0
Louisiana	233,561	278,708	302,623	335,805	292,907	328,814	328,814	0
Oklahoma	23,528	144,034	152,279	181,901	146,093	131,390	131,215	175
Texas	225,451	572,723	568,176	581,783	561,607	590,023	590,023	0
WESTERN	615,533	1,075,236	1,258,188	1,280,817	1,385,363R	1,428,675	1,428,309	366
Montana	7,300	16,000	18,000	20,000	26,000R	27,000	27,000	0
Idaho	25,342	65,050	60,000	50,000	74,000R	75,000	75,000	0
Wyoming	4,300	6,500	6,500	7,000	11,800R	12,000	12,000	0
Colorado	11,080	37,974	49,695	44,233	48,354	46,458	46,312	146
New Mexico	7,044	13,494	20,015	22,722	24,829	22,475	22,475	0
Arizona	21,600	76,000	106,960	109,234	116,047	135,481	135,481	0
Utah	12,320	28,554	30,053	25,513	32,420	22,379	22,306	73
Nevada	400	1,940	2,691	2,874	3,813	2,971	2,971	0
Washington	55,986	81,147	86,147	91,488	122,101	125,147	125,000	147
Oregon	41,955	107,931	100,350	119,695	122,999	128,194	128,194	0
California	428,206	640,646	777,777	788,058	803,000	831,570	831,570	0
UNITED STATES	12,054,688	17,983,988	18,826,107	20,076,522	20,230,781R	20,507,714	20,489,703	18,011

* States or areas included in Tennessee River Valley.
R Revised.
[1] Includes 2,556 Tons ACP Distributed Fertilizer.
[2] Includes 16,799 Tons ACP Distributed Fertilizer.

ANNUAL FERTILIZER CONSUMPTION IN THE U.S.

(Short Tons)

YEAR	TONNAGE	YEAR	TONNAGE	YEAR	TONNAGE	YEAR	TONNAGE TOTAL TONNAGE	TONNAGE COMMERCIAL SALES	TONNAGE GOVERNMENT DIRECT DISTRIBUTION
1880	1,150,000	1919	6,626,000	1931	6,354,000	1943	11,463,000	10,564,000	899,000
1890	1,950,000	1920	7,177,000	1932	4,385,000	1944	12,055,000	11,202,000	853,000
1900	2,200,000	1921	4,863,000	1933	4,908,000	1945	13,202,000	12,300,000	902,000
1910	5,453,000	1922	5,671,000	1934	5,583,000	1946	14,892,000	14,512,000	362,000
1911	6,024,000	1923	6,445,000	1935	6,276,000	1947	15,039,000	14,787,000	252,000
1912	5,767,000	1924	6,826,000	1936	6,931,000	1948	15,980,000	15,773,000	207,000
1913	6,337,000	1925	7,334,000	1937	8,226,000	1949	16,449,000	16,291,000	158,000
1914	7,100,000	1926	7,329,000	1938	7,548,000	1950	17,984,000	17,871,000	113,000
1915	5,324,000	1927	6,844,000	1939	7,707,000	1951	18,826,000	18,680,000	146,000
1916	5,125,000	1928	7,986,000	1940	8,249,000	1952	20,076,522	19,993,522	83,000
1917	5,926,000	1929	8,012,000	1941	9,183,000	1953	20,230,781	20,159,781	71,000
1918	6,467,000	1930	8,222,000	1942	9,949,000	1954	20,507,714	20,470,348	37,000

U.S. FERTILIZER CONSUMPTION BY REGIONS

(Short Tons)

REGION	1945 Consumption (Tons)	Per cent of Total 1945	1953 Consumption (Tons)	Per cent of Total 1953	1954 Consumption (Tons)	Per cent of Total 1954	Per cent Increase or Decrease 1954 over 1945
New England	500,190	3.8	469,153	2.3	423,408	2.1	—15.4
Middle Atlantic	1,242,521	9.4	1,497,597	7.4	1,440,297	7.0	15.9
East North Central	2,081,813	15.8	4,140,033	20.4	4,065,380	19.8	95.3
West North Central	490,584	3.7	1,821,747	9.0	2,070,373	10.1	322.0
South Atlantic	5,365,945	40.6	6,709,887	33.1	6,593,424	32.1	22.4
South Central	2,813,568	21.3	4,207,001	21.0	4,486,157	21.9	59.4
Western	707,082	5.4	1,385,363	6.8	1,428,675	7.0	102.1
United States	13,201,703	100.0	20,230,781	100.0	20,507,714	100.0	55.2

FERTILIZER USE

(Continued from page 1)

(See table on page 20.) In 1945, the year World War II ended, the East and West North Central states accounted for only 19.5% of total U.S. consumption. The South Atlantic states used 40.6% of the total that year.

In the 10-year period since 1945, fertilizer use in the South Atlantic states increased tonnagewise by more than 1.2 million tons, but dropped percentagewise to 32.1% of the U.S. total. Middle western farmers, meanwhile, were rapidly boosting fertilizer use so that in 1954 they accounted for 29.9% of the total and nearly as much tonnage as was used by South Atlantic farmers.

Only in the New England states has consumption decreased in the post-war years. In all other areas, farmers are using far more fertilizer than they did 10 years ago. For the U.S. as a whole, consumption has zoomed upward from 13,201,703 tons in 1945 to 20,507,714 tons in 1954—a 55.2% increase.

North Carolina, which historically has been the leading state in fertilizer consumption, again led all the states last year with 1,824,352 tons. Next in line, tonnagewise, was Georgia with 1,372,284 followed by Florida's 1,257,943 tons.

This is how the various regions stacked up tonnagewise in 1954 as compared with 1953:

South Central	+279,156
West North Central	+248,626
Western	+ 43,312
New England	— 45,745
Middle Atlantic	— 57,300
East North Central	— 74,653
South Atlantic	—116,463
United States	+276,933

The 10 leading states consumed well over half—55%—of all the fertilizer used in the U.S. in 1954. The states and their 1954 tonnages were:

North Carolina	1,824,352
Georgia	1,372,284
Florida	1,257,943
Alabama	1,196,628
Indiana	1,161,909
Ohio	1,008,400
Illinois	897,322
South Carolina	886,654
California	831,570
Virginia	776,786
Total	11,213,848

Direct government distribution of fertilizer for use in the Agricultural Conservation Program was at a low point last year. The U.S. Department of Agriculture made direct purchases of only 19,355 tons of which 2,556 tons went to farmers in Maine and 16,799 tons were distributed in Vermont. Similar purchases in 1953 totaled some 50,000 tons for distribution in seven states.

For use in its test and demonstration program, Tennessee Valley Authority shipped 18,011 tons during the 12 months from July 1, 1953 through June 30, 1954. This is 2,500 tons less than shipments during the preceding fiscal year.

Figures used in this report are for the calendar year from Jan. 1, 1954, through Dec. 31, 1954. The official U.S. Department of Agriculture fertilizer consumption report issued late in May is for the fiscal year ending June 30, 1954.

The NPFI report also differs from the USDA report in that tonnages of certain materials are not included to the extent it has been possible to eliminate them from available information. Materials excluded are limestone, phosphate rock, colloidal phosphate, basic slag, secondary and trace elements, gypsum, sulfur and other soil amendments. Consumption of these materials each year, not including limestone, may be as high as 2 million tons.

Harold R. Krueger

Harold R. Krueger Joins Sales Staff Of Stedman Foundry

Harold R. Krueger has joined the ales staff of Stedman Foundry and achine Co., Inc., as sales engineer r Alabama, Arkansas, Kentucky, ouisiana, Mississippi, Ohio, Oklaoma, Tennessee, Texas, West Virinia and Mexico.

Mr. Krueger comes to the Stedman rganization from The Snyder Chemial Company of Topeka, Kansas, and as previously associated with the hillips Petroleum Co. in Bartlesville, kla., and International Minerals nd Chemical Corp. in Chicago.

He will make his headquarters in tedman's home office in Aurora, Ind., nd his residence in Cincinnati, Ohio.

D. W. Watkins, Clemson Extension Director, to Retire

CLEMSON, S.C. — Announcement as been made that D. W. Watkins, irector, Clemson Extension Service, ill at his own request retire June 30. Mr. Watkins' career as an extension orker began in August, 1914, when e was appointed a dairy specialist the South Carolina Extension Servce. He has continued active in exension work in South Carolina since at time except for three nonconecutive years of leave for special ork out of the state.

In 1918 he became assistant direcr of the Clemson Extension Service, erving under the late Dr. W. W. ong. He continued as assistant diector until 1934, when upon the eath of Dr. Long, he became direcr. He has continued as director until e present.

Among committees of regional and ational scope on which Mr. Watkins as served are board of directors, harlotte Branch, Federal Reserve ank of Richmond; Extension Comittee on Organization and Policy, ssociation of Land-Grant Colleges nd Universities; National Committee on Wartime Extension Work; ational Committee on More Efficient se of Fertilizer and Lime; Federal xtension Committee on Problems in xtension Work with Negroes.

POTASH DEFICIENCY

GENEVA, N.Y.—Keeping vineyards ee from leafhoppers with DDT has ded grape growers in discovering otash deficiencies in their vines, ys Dr. Nelson Shaulis, Cornell rape specialist at the Experiment tation at Geneva, N.Y. In the past sect injury often masked the symps, he says. "About a third of the neyards in Chautauqua County ave shown potash deficiency the st several years and some vineds in the Finger Lakes area also ow symptoms," he states.

Stauffer Completes New Facilities at Tampa Pesticide Plant

NEW YORK—Completion of additional agricultural chemical production facilities at Tampa, Fla. has been announced by D. J. Keating, agricultural sales director of Stauffer Chemical Co.

Modern facilities for grinding sulphur and insecticide concentrates have been installed in the 13,000 sq. ft. building expansion, and provision has been made for enlarged warehouse space for raw materials and finished products.

A new control laboratory and maintenance shops have made the Tampa unit a complete operating plant capable of converting raw material into any formulation necessary to meet crop infestations in that area, according to the firm. The Stauffer's southeastern area agricultural sales office is located at Apopka, Fla.

CANADIAN PLANTS

(Continued from page 1)

be an expansion of CIL facilities at Beloeil, Que., to manufacture ammonia solutions for use in agriculture. Raw material will be ammonia from the new plant. This new supply will make materials available to customers who are now required to import.

The Millhaven site was selected by the company because it is central to consumers in eastern Canada. It marks the second step in the development of chemical operations on the 1,400-acre location purchased in 1954.

Fuel oil is planned as the raw material for the operation, but natural gas can be used if available. Since the recovery of ammonia from coke oven operations in Toronto in the 1880's, CIL has been a manufacturer of the product on a small scale. This new operation substantially extends the company interest in ammonia.

In connection with the Dofasco development Frank A. Sherman, chairman of the board, explains that 400 tons nitrogen are being dissipated into the air every day by a plant which makes 100 tons oxygen daily and it is proposed to combine this with hydrogen stripped from the coke oven gases to make anhydrous ammonia and other chemicals.

He added that preliminary studies of the situation indicated that the cheapest possible production costs could be attained in producing various chemicals due to the fact that the raw materials were already available at the existing plant.

Moreover, Mr. Sherman stated, the company has docks on one of the country's best harbors—Hamilton—opening up the possibility of reaching distant markets.

Douglas

A DEPENDABLE SOURCE FOR AGRICULTURAL CHEMICALS

Thirty-eight years of serving the industry with top-quality fumigants, agricultural chemicals and insecticides. With this record Douglas Chemical Company can assure you of quality products. In our laboratories and plant, the finest ingredients are blended and formulated into a complete line of products for the elimination and control of pests and insects. In the field, Douglas has become intimately familiar with the problems of farmers, grain producers, cattlemen, elevator operators and millers all over the country. As a result of this first-hand field research, each Douglas product is designed to fill a specific need.

What does this mean to you? It means that Douglas is a source that you can *rely* on for a complete line of agricultural chemicals and insecticides. Every product in the Douglas line has been tried and proved in use. You *know* you're right with Douglas!

DOUGLAS . . . a dependable line of fine agricultural chemicals.

Tetrafume Grain Fumigant
Tetrakil Grain Fumigant
Tetrakote Liquid Grain Protectant
Tetraspot Spot Fumigant
Farm Bin Spray
Special Mill Spray
Special Emulsion Spray Concentrate
Cattle Spray, Ready-Mixed
Cattle Spray, Emulsion Concentrate
20% Lindane Emulsion Concentrate
11% BHC Emulsion Concentrate
2# Aldrin Emulsion Concentrate
1.5# Dieldrin Emulsion Concentrate
25% D.D.T. Emulsion Concentrate
47% Chlordane Emulsion Concentrate
6# Toxaphene Emulsion Concentrate
5# Malathon Emulsion Concentrate
4# 2, 4-D Amine Weed Killer
2.67# Butyl Ester Weed Killer
3.34# Isopropyl Ester Weed Killer
2#, 2, 4-D, 2# 2, 4, 5-T Brush Killer
Rat-Kill with Warfarin
Water Soluble Rat & Mouse Killer with Pivalyn

Douglas CHEMICAL COMPANY
620 E 16TH AVE • NO KANSAS CITY 16 MO

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

Entomologists' Internship?

With schools and colleges just having completed another term and a good many thousands of graduates in various fields entering their chosen professions, the question arises as always, "What should a young man know when he graduates from college?"

Galen A. Hinkle, Midwestern Spray Chemical Co., Mission, Kansas, has done some thinking along this line, and has done some thought-provoking writing on the subject. His theme is that in the field of entomology, students should receive practical training, or internship, before graduation and that they should have a specialized training to fit them to cope with problems peculiar to different crops in various sections of the country.

Mr. Hinkle grants that the subject is a highly controversial one, but declares that it should be discussed seriously from the standpoint of student and prospective employer alike.

"To begin with," he writes, "the various departments of entomology in our colleges are doing an excellent job of presenting subject matter to the students. All the necessary courses are being offered to train a professional entomologist, and instruction is adequate in most cases.

"What is wrong, then?" he asks. "Why is it necessary for me, an insecticide manufacturer, to maintain on my payroll for perhaps 6 to 8 months, a newly-graduated entomologist, at an expense of from $500 to $750 a month without much hope of the boy's paying his way during that time?"

In addition, Mr. Hinkle observes, it is necessary also to carry adequate insurance of various kinds, as well as to devote much of the time of older employees to his training. "And I say all of this without intending to be critical of new trainees, because it is not their fault. They want desperately to pay their own way."

There is also the danger, Mr. Hinkle says, of the new entomologist deciding that he may not want to work in his new position, which in effect nullifies the investment in the boy. All of which, according to Mr. Hinkle, indicates that perhaps the colleges "are not quite completing the job of training their graduates in the entomological field."

"To remedy this abbreviated training is not going to be easy, but I'm going to stick my neck out and make some suggestions," he says. In the first place, he declares, "our prospective entomologists should have some practical on-the-job training before walking through the portals of commerce ready to earn a living. What is the remedy?"

He then addresses instructors in entomology, urging them to teach in a way that is in conformation to the requirements of the industry. He offers further to take two Junior entomology students and allow them to spend their final school year as a part of industry, the term being a sort of internship with credit toward graduation. Such an innovation would be done under established standards of the school involved, of course.

One further suggestion is made by the Kansas entomologist, and that is that the various college entomology departments could specialize in their training efforts.

"By this, I mean the entomology department at Kansas State should teach subjects that are concerned with the biology and control of stored products or grain insects; Colorado State specialize in forest insects; Purdue, household insects; Texas, insects affecting man and animals, etc. I do not mean by this that only the specialty subjects be taught but that the student be offered the opportunity to specialize in one phase of entomology to the extent that these men would fill a specific need. For example, a pest control operator would hire his men from Purdue, and I would hire my new personnel from Kansas State."

No doubt many in the educational field will counter Mr. Hinkle's observations with a reminder that someone along the line has done a thorough job to have trained the hundreds of excellent entomologists now holding responsible jobs in both government and industry. Obviously, this is true.

Still, while anyone can see many flaws in the proposal that academic instruction take on an economic aspect, our thought is that pros and cons should be heard.

Adopting "NPK" Labels

Another step toward eventual labeling of fertilizer elements as "N, P, K" was taken recently when the Soil Science Society of America voted an endorsement of proposed changes in reporting the plant nutrient content of commercial fertilizers, soils and plant materials. Under the present nomenclature, nitrogen is designated in its elemental form, "N," but phosphorus and potassium are stated in their oxide form, P_2O_5 and K_2O respectively.

While many people in the trade would agree that such a uniform arrangement would be ideal, still, looking at the matter objectively, one sees rather potent arguments on both sides.

Those who favor the adoption of NPK on labels point out that it would lead to greater uniformity in expressing nutrient content with less confusion; that the same method is already well established and workable in the feed and animal nutrition industries; and that most soil tests are already expressed on the elemental basis, as is the nitrogen content of fertilizers, soils and plants.

It is also pointed out that the matter of expressing fertilizer ratios would be much more "accurate and straightfordward" if done ón an elemental basis.

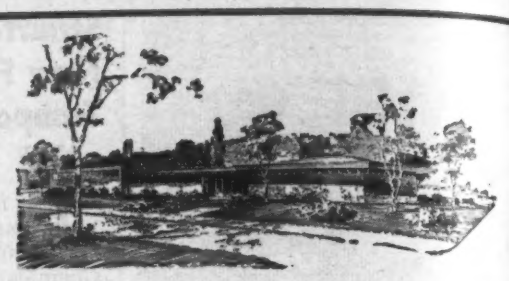
The Soil Science Society of America and also the Association of Official Agricultural Chemists who earlier indicated their favor of the new system, have good grounds on which to base their approval.

It must be kept in mind, however, that such things are not accomplished overnight. This is really recognized by the SSSA and others who have indicated that an "intensive educational effort" would be needed to acquaint all groups with the change. Many in the trade have conceded that a number of years would be required to make such an alteration, with a period of five years appearing to be about the minimum time.

There are other considerations, too. Would the new system create an impression of lowering the plant food content of fertilizers? Could be. Under the present system, a fertilizer ratio of 1:2:0 implies that twice as much phosphorus as nitrogen is in a bag. Actually, the ratio is only 1:0.88:0 when all of the nutrients are expressed on a uniform elemental basis.

This could conceivably give rise to fear on the part of the buyer that he gets less fertilizer per dollar than he used to get; a situation that could well add more buyer resistance than is now encountered in fertilizer sales. At the same time, however, the elemental system, being more simple and logical, could be explained more easily to anyone who is sincerely interested in the problem.

Probably the most difficult brake to release in allowing the new system to roll ahead, is the fact that present fertilizer laws would require revision in practically every state. If not coordinated on a national scale, chaos would result if neighboring states, for instance, had differing systems for labeling.



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

●

LAWRENCE A. LONG
Editor

DONALD NETH
Managing Editor

EDITORIAL STAFF—George L. Gates, Market Editor; John Cipperly, Washington Correspondent; George E. Swarbreck, Canadian and Overseas Editor; Emmet J. Hoffman, Merchandising Editor; L. R. McDonald, Research Director; Frank W. Cooley and Roger Berglund, Assistant Editors.

●

WILFRED E. LINGREN
Advertising Director

BUSINESS STAFF—Carroll K. Michener, Chairman of the Board of Directors; H. J. Pattridge, Honorary Chairman; Harvey E. Yantis, President; Milton B. Kihlstrum, Executive Vice President and Treasurer; Martin E. Newell, Vice President; Don E. Rogers, Vice President; Wilfred E. Lingren, Secretary and Advertising Director; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Pattridge, Assistant Treasurer; Carl R. Vetter, Advertising Production Manager; Peter G. Psyhogios, Classified Advertising Manager.

●

BRANCH OFFICES

EASTERN STATES—George W. Potts, Paul L. Dittemore, Co-Managers, 114 East 40th St., New York 16, N. Y. (Tel. Murray Hill 3-3768).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; James W. Miller, Assistant Manager; 614 Board of Trade Bldg., Kansas City 6, Mo. (Tel. Victor 1350).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn., Tel. Main 0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D. C. (WA 82). Cable Address: "Palmking," Minneapolis.

●

Published by
The Miller Publishing Co.
2501 Wayzata Blvd.
Minneapolis, Minn.
(Address Mail to P.O. Box 67, Minneapolis 1, Minn.)

Associated Publications
THE NORTHWESTERN MILLER
THE AMERICAN BAKER
FEEDSTUFFS
MILLING PRODUCTION

MEETING MEMOS

une 27-29—North Central Branch, American Society of Agronomy, Summer Meeting, Ames, Iowa.

une 28-30 — Sixth Annual Pacific Northwest Plant Food Assn., Regional Fertilizer Conference, Boise Hotel, Boise, Idaho; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

July 5-8—Plant Food Producers of Eastern Canada, Bigwin Inn, Muskoka, Canada.

July 14-15—Southwest Fertilizer Conference and Grade Meeting, Buccaneer Hotel, Galveston, Texas.

July 20-21—Great Plains Agricultural Ammonia Assn. Midwest Trade Show & Field Day; Business Session for Members July 20 at Hotel Fort Des Moines, Des Moines, Iowa; Field Day July 21 near Ames; James Andrew, Box 447, Jefferson, Iowa, Secretary.

July 27-29—Northeast Branch, American Society of Agronomy, University Park, Pa.

Aug. 8-10 — Summer Meeting of North Central Division, American Phytopathological Society, Wooster, Ohio; further information from H. C. Young, Dept. of Botany & Plant Pathology, Ohio Agricultural Experiment Station, Wooster, Ohio.

Aug. 9-11—Ohio Pesticide Institute Meeting and Field Tour, Wooster, Ohio; Dr. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.

Aug. 10—Kentucky Fertilizer Conference; Guignol Theatre, University of Kentucky, Lexington.

Aug. 15—National Joint Committee on Fertilizer Application, Cooperative Meeting with the American Society of Agronomy, University of California, Davis Campus.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Aug. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.

Sept. 7-9 — National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

Sept. 7-9 — Ninth Annual Beltwide Texas A&M College, National Cotton Council of America, Box 18, Cotton Mechanization Conference, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

Oct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers, University, New Brunswick, N.J., secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 17-18—Nitrogen Solution Field Day, National Nitrogen Solution Assn., State Armory, Springfield, Ill.; Roy F. Broyhill, Dakota City, Neb., meeting chairman.

Nov. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Kill Rats-Mice
Donaco
LIQUID BAIT
Contains PIVALYN
and DISPENSER
The only liquid dispenser on the market designed specifically for rats and mice! Holds 1 qt. of water mixed with 1½ oz. packet of Donaco Liquid Bait. Made of tough, durable Styron. Small evaporation area assures long-term effectiveness.
5¼" high
Bait 49¢—Dispenser 99¢
Write DONCO, Inc.
1150 W. Hampden, Englewood, Colorado
Dealer Inquiries Invited

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.

All Want Ads cash with order.

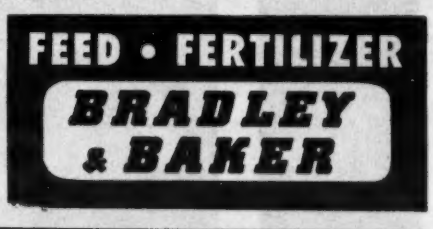
HELP WANTED

EXCELLENT OPPORTUNITY FOR EXperienced fertilizer salesman to represent an established company in north central midwestern area. State age, education, qualifications, experience and salary requirements. Write Address 825, Croplife, 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill.

MACHINERY FOR SALE

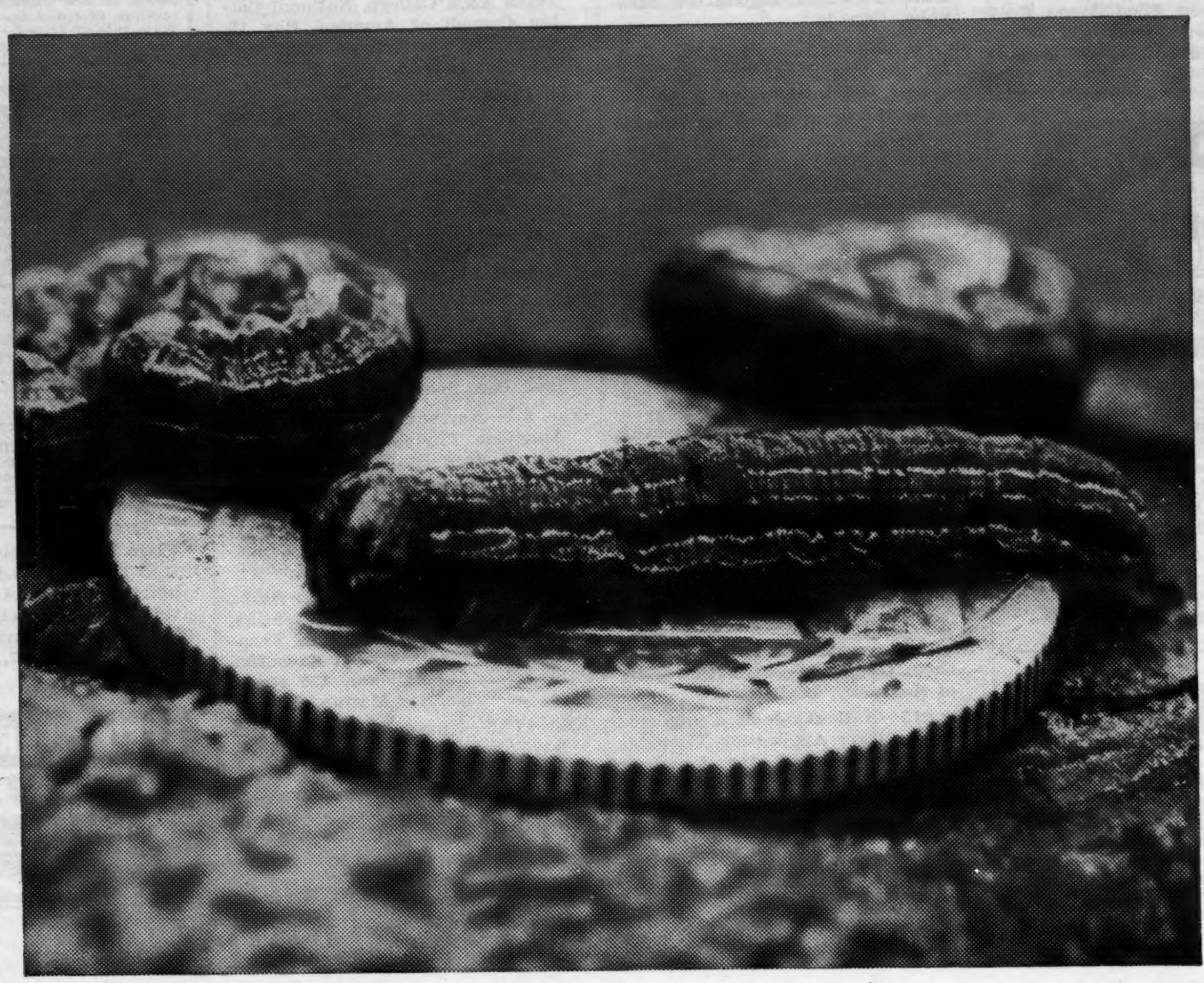
FOR SALE—TWO (2) 12,500 GALLON aluminum pressure tanks. Can be used horizontal or vertical. Meiners Soil Service, Colfax, Ill.

WANTED—USED STEDMAN OR WORTHington one-ton mixer, also HA Hough—must be located in Iowa, Nebraska, Kansas, Missouri, Illinois or Wisconsin. Address 895, Croplife, Minneapolis 1, Minn.



INDEX OF ADVERTISERS

Abrasion & Corrosion Engineering Co.....
Acme Fisher Div., Broadway Corp.....
Acme Protection Equipment Co.....
Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co.....
Agricultural Chemical Equipment Co.....
Allied Chemical & Dye Corp., General Chemical Division.....
Allied Chemical & Dye Corp., Nitrogen Div....
American Potash & Chemical Corp.....
Anco Manufacturing & Supply Co.....
Ashcraft-Wilkinson Co..... 19
Bagpak Division, International Paper Co.....
Baker, H. J., & Bro.....
Baughman Manufacturing Co., Inc.....
Beaird, J. B., Company.....
Bemis Bro. Bag Co.....
Bradley & Baker..... 23
Broadway Rubber Corp.....
Burkhardt-Larsen Co.....
Burrows Equipment Co.....
Butler Manufacturing Co.....
Calcium Carbonate Co.....
California Spray-Chemical Corp.....
Campbell, H. D., Co.....
Chase Bag Co.....
Chipman Chemical Co.....
Clover Chemical Co.....
Commercial Solvents Corporation.....
Croplife 20
Deere & Co., Grand River Chemical Div..... 17
Diamond Alkali Company.....
Doane Agricultural Service.....
Donco, Inc. 23
Douglas Chemical Co..... 21
E. I. Dupont de Nemours & Co., Inc.....
Ellsworth Equipment Co.....
Export Chemical Corp. of Colorado.....
Fischbein, Dave, Co.....
Floridin Company..... 6
Frontier Chemical Co.....
Gandrud, E. S., Co.....
Geigy Agricultural Chemical Co.....
General Chemical Division, Allied Chemical & Dye Corp.....
Gotcher Engineering & Mfg. Co.....
Grace Chemical Co..... 7
Grand River Chemical Div., Deere & Co..... 17
Hahn, Inc.....
Hammond Bag and Paper Co..... 23
Henderson Mfg. Co.....
Hercules Powder Co..... 24
Highway Equipment Co.....
Hills-McCanna Co.....
Hypro Engineering, Inc..... 18
International Minerals & Chemical Corp.....
International Paper Co., Bagpak Division.....
K. B. H. Corporation, The.....
Ketona Chemical Corporation.....
Kay Enterprises .....
Kraft Bag Corporation.....
Larvacide Products, Inc.....
Lion Oil Co..... 13
The Mackwin Co.....
Markley Laboratories, The..... 8
Wilson & George Meyer & Co.....
Michigan Chemical Corporation.....
Midstate Machinery Co.....
Midwestern Spray-Chemical Co., Inc..... 2
Naugatuck Chemical Div., U.S. Rubber Co.....
Nelson, Edward S., Ltd.....
Niagara Chemical Division Food Machinery and Chemical Corp..... 5
Nitrogen Div., Allied Chemical & Dye Corp....
Northern Chemical Industries.....
Olin Mathieson Chemical Corporation, Insecticides Division.....
Pacific Coast Borax Co.....
Pacific Plastics Company.....
Pennsylvania Salt Manufacturing Company of Washington.....
Chas. Pfizer & Co., Inc.....
Phelps-Dodge Refining Corp.....
Phillips Chemical Company.....
Pittsburgh Coke & Chemical Company, Agricultural Chemicals Division.....
Potash Company of America..... 3
Poulsen Company .....
Powell, John, & Co., Inc.....
Private Brands, Inc..... 8
Rapids Machinery Co.....
Riverdale Chemical Co.....
Savage, K. E., Co.....
Schrock Fertilizer Service.....
Shell Chemical Corp.....
Sohio Chemical Co.....
Specifide, Inc.....
Spencer Chemical Co.....
Spray Dust, Inc.....
Stoker, H. S., Company.....
Tennessee Corp.....
Thompson-Hayward Chemical Co.....
Umbaugh Agricultural Chemical Co.....
Union Bag and Paper Corp.....
United Petroleum Gas Co.....
U.S. Industrial Chemicals Co.....
United States Phosphoric Products Division Tennessee Corp.....
United States Potash Co.....
U.S. Rubber Co., Naugatuck Chemical Div.....
United States Steel Corp.....
Velsicol Corporation.....
Virginia-Carolina Chemical Corp.....
Vulcan Stamping & Mfg. Co.....
Vulcan Steel Container Co.....



NO TWO-BIT GLUTTON

Armyworms or cutworms are no bigger than a quarter but their ravenous appetite can cost you tremendous crop damage.

Successful farmers have found that toxaphene will stop these pests in a hurry. And the same holds true for overwintered boll weevils, fleahoppers, thrips—the mixed population of insect pests now invading many fields in this area. Toxaphene control protects your crop now, and helps avoid later season buildups.

Toxaphene sprays are preferred for their outstanding economy, but dust or spray you'll find toxaphene measures up to the demands you make of an insecticide. See your dealer now. He has an adequate supply of toxaphene insecticides on hand.

TOXAPHENE dusts · sprays

Agricultural Chemicals Division, Naval Stores Department

HERCULES POWDER COMPANY
INCORPORATED

931 Market St., Wilmington 99, Del.

Plants at Brunswick, Ga., Hattiesburg, Miss. Offices at Atlanta, Birmingham, Brownsville, Dallas, Los Angeles, Raleigh

NX55-9

THE CHEMICAL BASE FOR TOXAPHENE IS PRODUCED BY HERCULES FROM THE SOUTHERN PINE